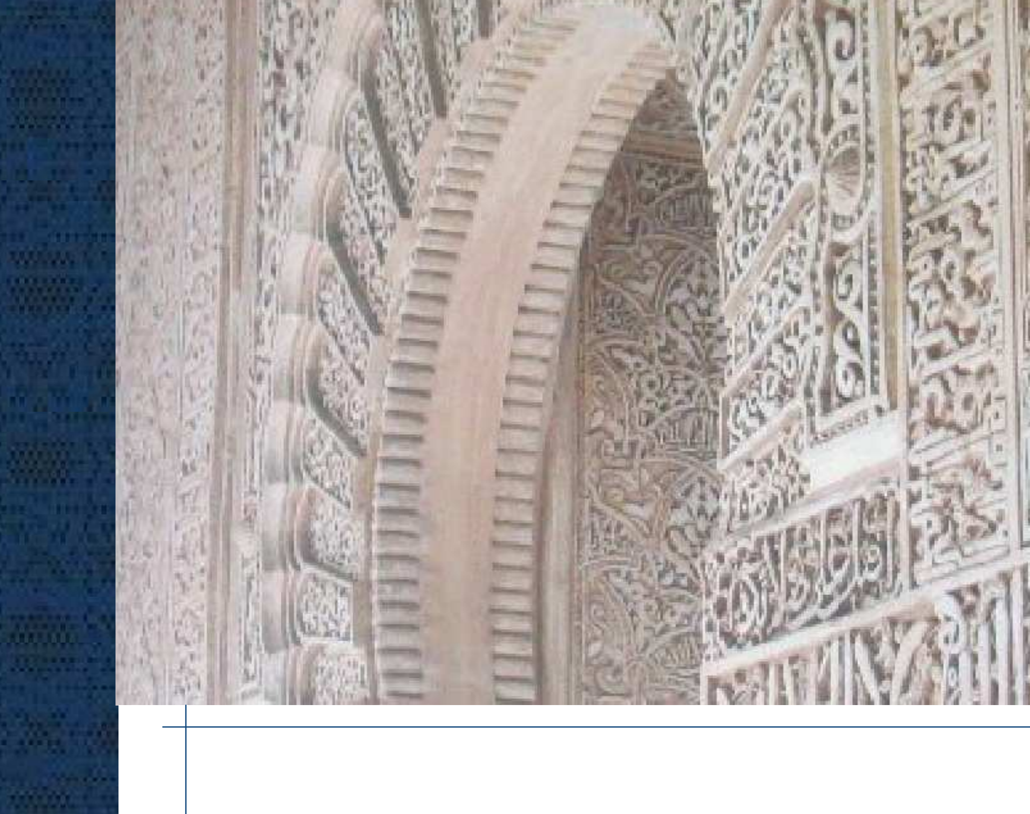


ISLAMIC ART AND CULTURE

{ A RESOURCE FOR TEACHERS }

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National Gallery of Art, Washington

This packet was produced in conjunction with the exhibition *Palace and Mosque: Islamic Art from the Victoria and Albert Museum.* It has been supplemented with objects not in the exhibition.

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Grenada, Spain
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ABOUT THIS PACKET

This teaching resource consists of

- this booklet, which contains introductory material, slide descriptions, teaching suggestions, maps, a glossary, and resources
- twenty slides
- four color reproductions
- a CD with image files, and a PDF version of the online feature *Artistic Exchange: Europe and the Islamic World*

ISLAMIC ART

"Islamic art" is a label coined in the West in the nineteenth century. Unlike "Christian art" or "Buddhist art," it does not describe art with a particular set of religious imagery. In fact, Islamic art has few exclusively religious symbols comparable to the Christian cross. Instead, the term "Islamic art" designates all art, religious or secular, that was produced in lands under Muslim leadership. Its makers and its patrons might be Muslim or not. In this packet we look at works that span nearly a thousand years—from shortly after the foundation of Islam in the seventh century to the seventeenth century when the last two great Islamic empires—the Ottoman and the Safavid—had reached their peak. Although the definition of Islamic art usually includes work made in Mughal India, it is beyond the scope of this packet. The works we will look at here come from as far west as Spain and as far east as Afghanistan.

Naturally, within this span of time and space many variations and styles occur. Yet, Islamic art remains somehow "recognizable" throughout. In the West, the word "art" produces mental images of paintings hung on walls or large-scale sculpture, but these (although not unknown) are not the focus of Islamic art. Rather, the most important outlets for artistic expression in the Islamic world were:

- architecture
- the arts of the book (calligraphy, manuscript illumination, and bookbinding)
- the arts of the object (especially metalwork, ceramics, glass, and textiles)

And each of these was ornamented with a particularly Islamic vocabulary of surface decoration:

- calligraphy
- arabesques, scrolling patterns, and floral or plant designs
- geometric designs



CALLIGRAPHY

Islam developed in a nomadic Arab culture that valued poetry and oral tradition. The faith's fundamental basis is the message of God that was given to and relayed by the Prophet Muhammad, and that is preserved in the Qur'an. While Christians accept Christ as God's incarnation, Muhammad does not share God's divinity. The priority of the words themselves, rather than the messenger, left Islam with little use for iconic images like those that developed in early Christianity. Instead, the emphasis on the words and the language of God's message elevated the script in which they were recorded. Calligraphy—beautiful writing—became the most revered of all the arts. It was used—on buildings and art of all types—to communicate the words of the Qur'an or other messages but also for its decorative effect.

ARABESQUES

Scrolling patterns of plant and floral motifs were part of the visual vocabulary Islamic art inherited from its early Byzantine and Sasanian predecessors. They became so identified with Islamic art that in the West they came to be called "arabesques." Much of the Islamic world is arid and hot, and vegetation is scarce. Although too much can be made of the influence of this environment on art, it is perhaps natural that images of paradise reflect a lush world, full of flowers and fragrance, and well watered by cooling streams—and that these would be considered beautiful as ornament.

GEOMETRIC DESIGNS

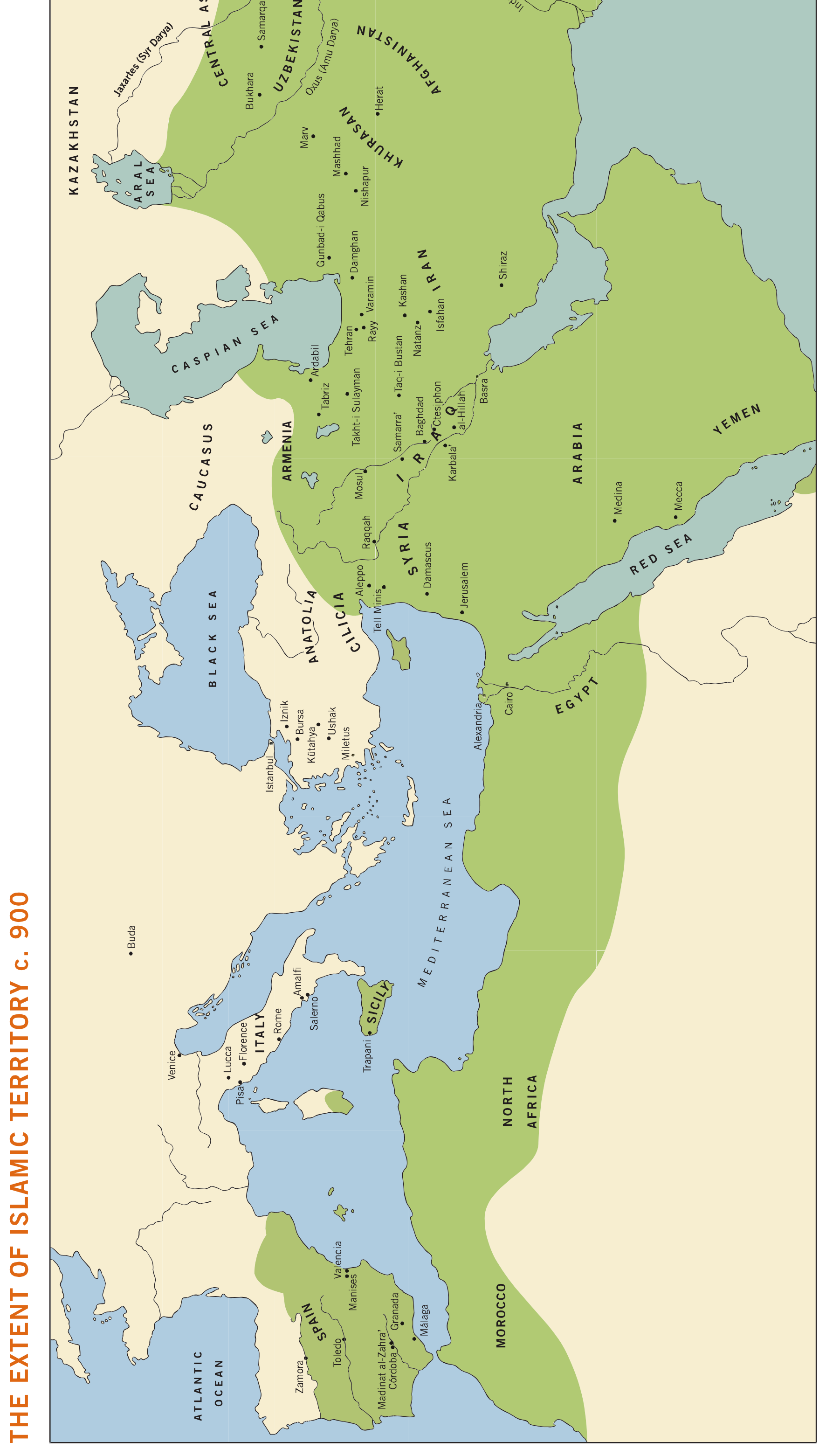
Repeating geometric patterns express—and embody—unity within diversity and the harmony that governs all things. They satisfy the Islamic principles of *tawhid* (the unity of all things) and *mizan* (order and balance)—and in so doing, they reflect the perfection of God's creation. Allah, the Qur'an says "ordered all things...."

Oppisite page:
Minbar for Sultan Qa'itbay (detail)
Egypt (Mamluk), probably Cairo,
between 1468 and 1496,
Wood and ivory inlay
Victoria and Albert Museum, London

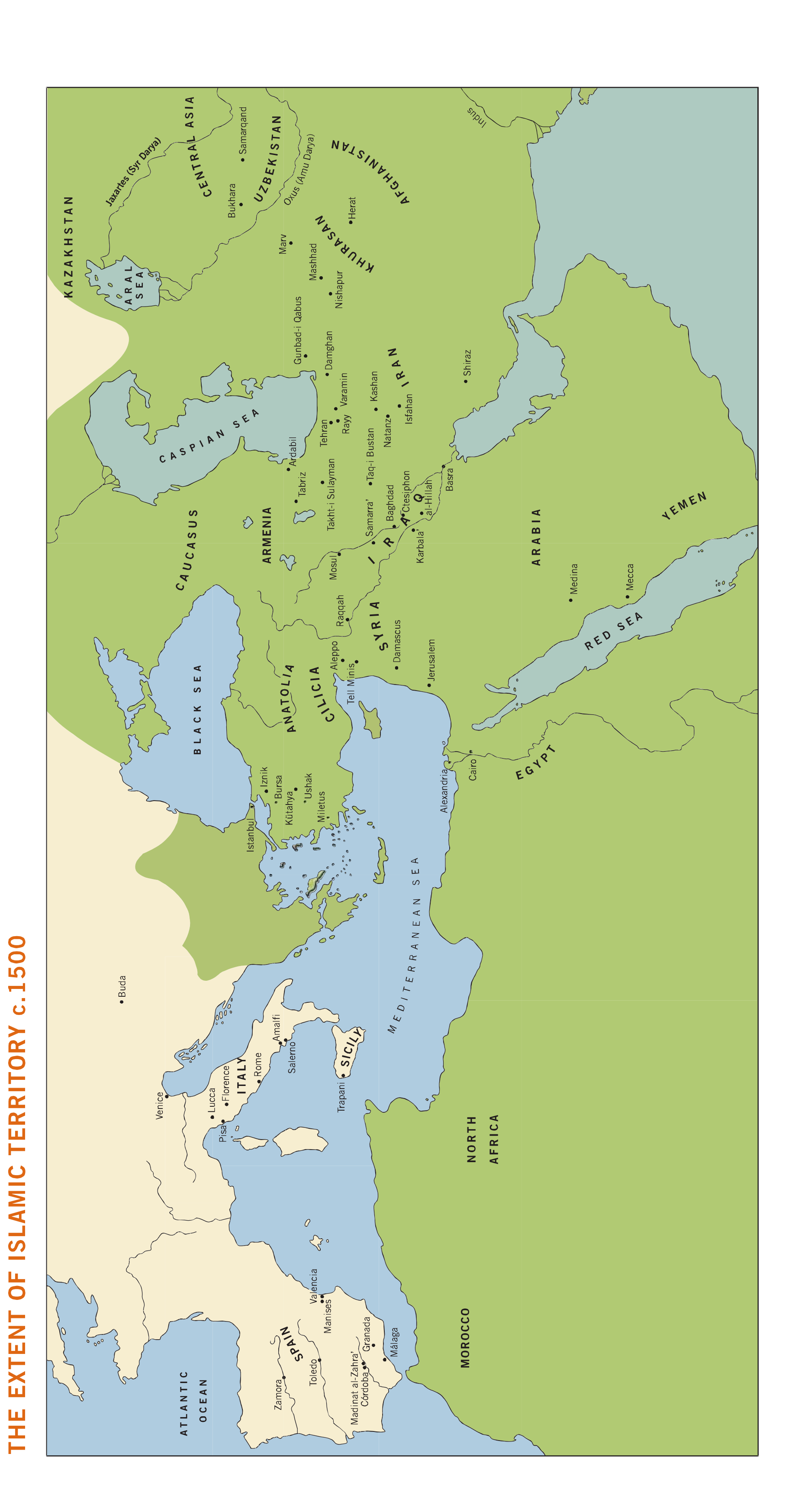
THE QUESTION OF IMAGES

It is often believed—incorrectly—that the Qur'an prohibits images of living beings, either human or animal. The Qur'an *does* condemn the worship of idols: "O ye who believe, wine and games of chance and idols and divining arrows are an abomination of Satan's handiwork…" (5.92). And the accounts and sayings of the Prophet recorded in the *hadith*—some collected much later—suggest his distrust of representation. Such likenesses could be seen as usurping the creative action of God. From the very first, figures were absent in mosques, and then in other religious settings such as schools. Even the items used in religious buildings avoid figural decoration. But Islamic art is rich with figural decoration elsewhere: in the wall paintings and mural tiles within palaces; in manuscript illumination; on textiles; and on metalwork and ceramics not intended for religious purpose.

THE EXTENT OF ISLAMIC TERRITORY c. 900



THE EXTENT OF ISLAMIC TERRITORY c.1500



MUHAMMAD AND THE BEGINNINGS OF ISLAM

Muhammad was born around the year 570 in Mecca, a wealthy commercial and religious center in western Arabia. When he was about forty years old, Muhammad began to experience visions. One day, a voice exhorted him to "recite in the name of the Lord who created you. . . ." Initially, Muhammad fled in confusion and fear, but the voice called after him, "O Muhammad, you are the messenger of God, and I am the angel Gabriel." This was the beginning of God's revelations to Muhammad; they continued for some ten years.

Muhammad's message about the one true God quickly won followers in Mecca. The city was home to the most important religious shrine in Arabia, where many gods were worshiped. Tensions quickly arose with the city's leaders, and in 622 Muhammad fled with his followers to the city of Yathrib. Soon it was being called Medinat al-Nabi—the town of the Prophet—and then simply Medina. In Medina the new religion took on a secular aspect as followers looked to Muhammad for civic guidance. From the very outset, the adjective "Islamic" described not simply a spiritual and moral reality, but also a political one.

{ THE ISLAMIC CALENDAR }

Muhammad's migration to Medina, called the *hejira,* marks the start of the Islamic calendar. Dates are counted from A.D. 622 and designated "A.H." This exhibition opened in 2004—that is 1425 A.H. Months are based on the lunar cycle, so the year is slightly shorter than the 365-day Gregorian calendar or the solar year. This means that the months "slip"; they do not coincide with particular times of year. In this packet all dates are given according to the Western calendar.

THE FIRST CALIPHS AND THE UMAYYADS

When Muhammad died in 632, no successor had been identified—or even whether a successor was possible. Were individual Muslims bound only to God or also to each other in an Islamic polity? Initially, some Arab tribes withdrew from the Muslim state. Abu Bakr assumed Muhammad's temporal authority (no one could replace him as prophet) and for two years battled breakaway tribesmen before his victory ensured that the *political* community of Islam endured.

Abu Bakr and the three men who followed had been companions of the Prophet and early converts. They came to be called **the four "rightly guided caliphs" (632–661)**—a word that means "successor." Despite rapid expansion of the faith, serious internal conflicts emerged. After the third caliph was assassinated, a struggle for the succession pitted his kinsman, Mu'awiya, and the Prophet's son-in-law Ali. Ali prevailed but was himself assassinated in 661.

After Ali's death, Mu'awiya was recognized as caliph. He soon identified his son as heir and successor, establishing the first Islamic dynasty. The **Umayyads (661–750)** moved the capital from Medina to Damascus. Its easier access to the wider world of the Middle East and the Mediterranean made it a more effective center for quickly growing administrative, military, and governmental functions. The mode of government also changed, the consensus of old tribal chiefs giving way to a more autocratic style modeled on the neighboring Byzantine and Sasanian empires.

By 750 the Islamic empire covered a quarter of the globe, from the Atlantic Ocean to the Indus River, and had acquired unprecedented wealth. However, what had begun as a dispute over the selection of a new caliph was deepening into a religious split. It centered on the nature of a leader's authority. Who was qualified to govern the Islamic community and ensure a just society? What was the basis of his legitimacy?

Three main groups emerged. One held that anyone who had sinned or committed an injustice was unfit to govern, an extreme view that eventually fell outside the mainstream of political life. The Shi'as—literally the "partisans" of Ali—held that the leader of the Islamic community should be a direct descendant of the Prophet. Sunnis—the word is derived from "tradition"—accepted any caliph who

{ ART OF THE UMAYYADS }

The earliest art that we can call Islamic was produced under the Umayyads. While the new religion, and the Arabic language, quickly unified and defined their growing empire, their art looked to existing regional styles. The artistic traditions of two great empires—whose territories were quickly falling to Islamic conquest—shaped the early development of Islamic art. From the Byzantine West, it inherited the late classical tradition and a vocabulary of stylized vines, scrolls, and plant motifs. Early Islamic architects continued Byzantine experiments with domes and adapted other Byzantine forms to new uses. From Sasanian Persia (now Iran), Islamic artists inherited a repertory of court and hunting scenes (mostly from metalwork) that was well matched to Islamic rulers' adoption of elaborate Sasanian court rituals. Motifs like confronted lions and griffins were based on the symmetrical designs of silk textiles. And the open arched space of Sasanian entryways—the *iwan*—would become one of the most identifiable elements of Islamic architecture.

{ SHI'AS AND SUNNIS }

Today Sunnism and Shi'ism are Islam's most important branches. The vast majority of Muslims—more than eighty-five percent—are Sunnis, but nearly all Islamic countries also have Shi'ite (and other) minorities. Today most Shi'as live in Iran and Iraq. Sunnis, who represent Islamic orthodoxy, believe that the community as a whole can interpret the Qur'an. Shi'as, on the other hand, believe that only Ali—whom they see as having possesed special understanding of Islam—and his descendants were the true sucessors of the Prophet. They believe the authority to interpret the Qur'an and lead the community in prayer rests only with devout, religious teachers *(imams)*.

could ensure the unity of the Islamic community. Sunnis respected the caliph as the political successor of Muhammad but rejected any claim that he was the Prophet's spiritual heir.

Armed revolt struck in many regions in the 740s. The last Umayyad caliph fled to Egypt, where he was killed. Only one member of the family survived. 'Abd al-Rahman escaped to North Africa, and from there to Spain, where he established a new Umayyad dynasty at Córdoba that lasted until 1031. Other Muslim rulers would continue to govern parts of southern Spain until 1492. (See page 33 for more information about Islamic Spain.)

A GOLDEN AGE: THE ABBASID DYNASTY

After the Umayyads fled, a descendant of the Prophet was appointed caliph and inaugurated a new dynasty—the **Abbasids (750–1258)**. The second Abbasid caliph, al-Mansur (ruled 754–775), moved the capital once again, shifting the focus farther east. On the site of a small village, at a point where the Tigris and Euphrates rivers run close to each other, he measured out an entirely new, round city. He named it Madinat al-Salam, city of peace, but it soon reverted to its original name—Baghdad.

Although Abbasid caliphs lost real control over the whole of the Islamic empire within about a hundred years, the first three centuries of their rule are often called a "golden age." Their courts and enormous palace-cities, captured in fantastic tales from the Arabian Nights, were the richest in the world, unsurpassed in luxury, sophistication, and culture. Nothing in Europe compared.

As the Abbasid caliphs weakened, independent or semi-independent dynasties assumed power in Egypt, Iran, and other areas. By the tenth century, Abbasid control was effectively limited to Iraq. Baghdad itself had been captured three times by 1055, once by a Shi'ite dynasty from Persia and twice by Seljuk Turks (see below). Although they retained influence and prestige as the protectors of Sunni orthodoxy, politically the Abbasid caliphs became little more than figureheads. Baghdad was again attacked in 1258, this time in a devastating invasion of Mongol armies from Central Asia. Surviving members of the Abbasid dynasty fled to Egypt, now ruled by Mamluk sultans.

{ ART OF THE ABBASIDS }

Because Abbasid art was widely disseminated, its style and techniques contributed greatly to the evolution of Islamic art. Abbasid carvings in stone, stucco, and wood have a distinct, flatly beveled style. Their repeated and highly stylized or geometricized vegetal patterns would eventually be called "arabesques," and they found their way onto almost every kind of surface. Abbasid art responded to the luxury of the court. For the first time in the Islamic world, ceramics seemed to have been viewed as an art form, perhaps in response to the fine Chinese porcelains that were then making their way west via the silk road.



Plate with splashed decoration
Iraq (Abbasid), probably Basra,
9th–10th century
Tin-glazed earthenware with colored glaze
Victoria and Albert Museum, London

{ ART OF THE FATIMIDS }

Fatimid taste for luxury spurred an efflorescence of the arts. Al-Fustat (the old town of Cairo) became a major center for luxury goods. Fatimid artists were celebrated for ceramics, especially lusterwares whose metallic decoration mimicked precious metals, as well as for textiles, glass, inlays in wood and ivory, and carvings of rock crystal. Painters of lusterware sometimes signed their work—an indication of greater status. Fatimid decoration includes calligraphy, lively vegetal designs, and elaborate geometric patterns. But it also reveals a great interest in figures.

EARLY MEDIEVAL DYNASTIES IN THE WEST: FATIMIDS, AYYUBIDS

As Abbasid authority weakened, the Shi'ite **Fatimid dynasty (909–1171)**—claiming descent from Fatima, daughter of the Prophet and wife of Ali—rose to power in North Africa. They expanded into Egypt and Syria, and in 969 founded a new capital at Cairo (the name means "the victorious"). Fatimid control of trade around the Mediterranean brought enormous prosperity, and Cairo became an important cultural center.

After the Fatimids sought aid from Syria against invading Crusader armies, a Syrian officer—Salah al-Din ibn Ayyub (better known in the West as Saladin)—overthrew the Fatimid ruler to establish a new dynasty. The **Ayyubids (1171–1250)** restored Egypt to Sunni orthodoxy. Salah al-Din expanded Ayyubid territory into Yemen, Syria, and Iraq, and in 1187 he decisively defeated the Crusader states. Ayyubid territory broke into a collection of semi-autonomous principalities after his death, but it continued to enjoy peace and prosperity.

EARLY MEDIEVAL DYNASTIES IN THE EAST: GHAZNAVIDS, SELJUKS

Large migrations of nomads from the steppes of Central Asia brought Turkish peoples into the Middle East and Asia Minor. A series of Turkish dynasties replaced the mostly Shi'ite Persian governors who had taken effective control from the Abbasid caliphs in the ninth and tenth centuries. The earliest of these Turkish dynasties were the **Ghaznavids (977–1186).** From their original base in Afghanistan, they moved into Iran, adopting Persian customs and the Persian language.

Early in the eleventh century, the Ghaznavids lost most of Iran to a new Turkish dynasty, the **Seljuks (1038–1194).** In 1055 the Abbasid caliph in Baghdad was forced to grant the Seljuk leader the title "sultan," a word that means power. Turkish slave-soldiers had served the caliphate for centuries, but now the Seljuk sultans controlled a large empire outright (although they ruled in the name of the caliph). The Seljuks were a military elite. Iran, Iraq, Syria, and Turkey all came under their authority. Islam's rulers were once again nomadic people, and their customs were superimposed over Persian and Arab societies. As Sunnis, the Seljuks worked to restore orthodoxy in the east, largely by building religious schools. They vigorously suppressed the Shi'ism of their Persian predecessors.

Although their territory would soon become fragmented and governed by different Seljuk branches, the Seljuks' impact on the Islamic world was important—in political, cultural, and artistic terms—and lasted long after the last Seljuk sultan. Most important was their shift toward Iran, away from Arab lands to the west. A fundamental divide between eastern and western Islam has endured ever since.

LATE MEDIEVAL PERIOD: MONGOLS AND MAMLUKS

In Syria and Egypt, the death of the last Ayyubid ruler was followed by years of chaos. From the turmoil a military leader emerged to establish a new "dynasty." His name meant Lion; his successor was called Cormorant. These new rulers rose from the ranks of military slaves, mamluks, not as sons of sultans. For the next two hundred fifty years, **Mamluk sultans (1250–1517)** in Cairo ruled Egypt, Syria, western Arabia, and parts of Anatolia.



Bowl with luster decoration
Egypt (Fatimid), probably Cairo, second half of the 11th century
Fritware with overglaze luster
Victoria and Albert Museum, London, Purchased with the assistance of the National Art Collections Fund

Fatimid artists—and Fatimid patrons—included a mixture of Christians, Muslims, and Jews. It is often impossible to ascribe a work to one group or another. This luster bowl, which shows a Coptic priest holding a censer, was likely made for the Egyptian Christian community.

{ ART OF THE SELJUKS }

Many Seljuk contributions were refinements of earlier forms. This is true, for example, of their introduction of the four-*iwan* mosque, which used open arched rooms borrowed from Sasanian palaces. The Seljuk world experienced an explosion of artistic production: in metalwork, textiles, and ceramics. Patronage expanded too, no longer limited primarily to the court, and more utilitarian objects began to receive decoration, often figural decoration. Seljuk artists contributed new techniques, including fritware, a white quartz-based ceramic that imitated Chinese porcelain. Initiating a great age of Islamic metalwork, they also perfected techniques to inlay bronze or brass with silver, copper, and sometimes gold.

{ MAMLUKS }

The word "mamluk" means "owned." Young boys, mostly Turks or Circassians, were captured or sold by their families, and taken to Egypt or Syria. They were converted to Islam, trained in the military arts or public administration, and assigned to serve the sultan. As they rose in the hierarchy, the slaves were freed and became members of the ruling elite themselves. One of them would be accalimed the next sultan.

The Mamluks succeeded in routing the Crusaders from the Middle East, and they battled a new threat from the East. From 1219 on, Iran had suffered repeated and devastating invasions by Mongol armies, led first by Chinggis Khan. By the time Chinggis Khan died in 1227, Mongol conquests extended from the China Sea to Ukraine—they ruled in China as the Yuan dynasty and in Russia as the Golden Horde. After taking Baghdad in 1258, they established a dynasty of Mongol sultans, known as the **Il-Khanids (1258–1335).** The name, which means "lesser khans," identified them as subordinates to the Great Khan in China. They governed from Iraq to Afghanistan and were followed by a series of successor states. A new wave of invasions was launched by Timur, known in the West as Tamerlane. The **Timurids (1370–1501)** ruled Iran, Iraq, and Central Asia. The Mongol invasions form a decisive break between early and later Islam. From then on two rival empires would control most of the Islamic world.

THE LATE EMPIRES: OTTOMANS IN THE WEST

By the later fourteenth century, the Mamluks were in political decline. Like Europe, Egypt and Syria had been devastated by the Black Death at the end of the 1340s. Famines created economic problems that were greatly exacerbated when Western explorers found new sea routes to the riches of the East, bypassing the Middle East. The Mamluks fell to a new group of raiding Turks, the **Ottomans (1281–1924)** who had begun to consolidate power in Asia Minor before 1300.

The Ottoman sultans renewed territorial expansion in the west—even into Europe. In 1453 they captured Constantinople (today Istanbul), the still highly prized capital of the now-faded Byzantine empire, and made it their own capital. The Ottoman sultans assumed leadership of Sunni Islam, integrating government and Islamic law. In addition to orthodox schools, they sponsored Sufi orders (see page 34), whose more mystical approach appealed to popular piety. Ottoman policies protected the property and political rights of non-Muslim minorities, and they were open to Western technology and innovation. Ottoman administrations were

{ ART OF THE MAMLUKS }

After Baghdad fell to the Mongols in 1258, Cairo was the unrivaled center of the Islamic world, a great cosmopolitan city enriched by trade. Its population numbered in the hundreds of thousands, its buildings rose to six storeys. In a sense the greatest work of Mamluk art is the city itself. Mamluk sultans built extensively as expressions of power and prestige, endowing large charitable complexes that included mosques, schools, and other institutions—and often their own mausoleums. The Mamluks' art reflected their military culture, emphasizing hierarchy and public display. Inscriptions, naming the patron with long panegyrics, are a prominent feature. After architecture, metalwork was a major outlet and was produced in large quantity. The finest pieces of Mamluk metalwork are dazzling displays of technical skill. Mamluk glass was also highly prized. For the first time anywhere, colorless glass could be made, and was embellished with enamel colors and gilding.

{ ART OF THE MONGOLS }

With what is often called the Pax Mongolica, travelers—beginning with Niccolo and Maffeo Polo—could move safely between the West and China, really for the first time. So it is not surprising that the arts produced for Mongol rulers reflect an openness to other cultures and an eastern flavor. Their artists imitated the blue-and-white porcelains of China and covered buildings with brilliantly colored, glazed tilework. They placed a new emphasis on the arts of the book. Painters illustrated works of literature in a style influenced by Chinese painting. Chinese motifs also appeared on luxury textiles.

well-organized bureaucracies. Many able soldiers and officials rose through the system of *devshirme,* which removed promising young boys from non-Muslim homes, sponsored their education, and placed them in palace service.

The peak of Ottoman culture and influence came in the sixteenth century with the reign of sultan Süleyman the Magnificent (ruled 1520–1566), who extended the empire into Mesopotamia and eastern Europe. Ottoman armies threatened Vienna in 1529 and again in 1683. After the sixteenth century, however, Ottoman power declined and the society stagnated—eventually Turkey would be called the "Sick Man of Europe"—but the sultanate continued until shortly after World War I.

{ ART OF THE OTTOMANS }

Serving an empire that bridged the Middle East and Europe, Ottoman artists gave and received influences, East and West. Their architects remained devoted to a form inherited from Byzantium: the dome over a square. Among the most recognizable Ottoman art is Iznik pottery. Typically decorated with stylized flowers, Iznik pottery was produced as a state monopoly. Ottoman sultans also sponsored workshops for the production of books, both Qur'ans and works of literature. Ottoman miniaturists depict imagined scenes, but also the activity of the world around them—histories and events at court. As always, calligraphy was highly prized, and a particular type called the *tughra* was used as the sultan's sign on official documents, coins, and buildings. Textiles survive in large numbers—something that is not the case for earlier periods.



Child's kaftan with tiger-stripe design
Turkey (Ottoman), probably Bursa, 16th century
Woven silk and metal thread; cotton lining
Victoria and Albert Museum, London

The stylized stripes on this kaftan recall the tiger-skin robe worn by the Persian mythological hero Rustam.

THE LATE EMPIRES: SAFAVIDS IN THE EAST

In Iran rule passed to the **Safavid dynasty (1501–1722)**. The Safavid shahs (Persian for "kings") traced their descent from the Prophet's son-in-law Ali, and they went about making Iran a Shi'ite state. In so doing, they established the national identity Iran carries to this day. (The name Persia was abandoned in 1935.) The first Safavid shah was a charismatic leader—red-haired and left-handed—who captured Tabriz at the age of fourteen. His great-grandson Shah 'Abbas strengthened the military and administration, and organized the economy, making Iran a power to rival the Ottomans. He established his capital at Isfahan and undertook an extensive building campaign. Isfahan's great square—more than twenty acres—is possibly the largest public square in the world; it was the site of markets, polo matches, archery contests, military parades, and executions. At night, it was lit by fifty thousand lamps.

The shah cultivated European support against his Ottoman rivals and as partners in trade for luxury goods, especially textiles. As much as anything else, it was the decline of this trade that weakened the Safavid dynasty. In 1722 an Afghan tribal leader captured Isfahan.

{ ART OF THE SAFAVIDS }

Much of the greatness of Safavid art is in architecture: the glitter of tiled surfaces, the impressive rise of arched doorways, and grace of pointed domes. Safavid artists also excelled in the arts of the book. Their manuscripts were among the highest quality ever produced. For the first time, the names of artists—not just calligraphers—become known. Eventually painting would expand from books to single-page illustration and attract a wider audience. Safavid textiles have been called "paintings in another medium." Magnificent sixteenth-century court carpets often had figural designs that echoed the narratives seen in book illumination. Elaborate floral backgrounds evoke gardens and, ultimately, paradise. Production of carpets, velvets, and other luxury textiles was organized into a national industry for domestic and international markets. Safavid potters produced interpretations of Chinese blue-and-white wares.

{ SECTION 1 }

ISLAM, THE MOSQUE, AND THE QUR'AN

Islam is a faith shared by more than a billion people in every part of the world. In Arabic "Islam" means "submission" and comes from the word for peace—the peace Muslims receive in submitting to God. In the West we have tended to associate Islam with the Middle East, where it originated, but today Indonesia is home to the largest Muslim population, more than live in Iran, Iraq, Syria, Egypt, and Saudi Arabia combined.

The teachings of Islam were revealed to the Prophet Muhammad in the seventh century A.D. It is the youngest of the world's great monotheistic religions. Muslims see Islam as the continuation—and completion—of Judaism and Christianity, and they honor patriarchs and prophets from Abraham to Jesus as Muhammad's predecessors. When Muslims pray to Allah, they are praying to the same one true God worshiped by Christians and Jews—Allah is simply his name in Arabic. Islam makes strict distinction between the Creator and all parts of his creation; Muhammad did not share God's divinity. He was God's prophet, his messenger and a model for believers, but fully human. God is awesome and transcendent, and most Muslim prayers are said in praise and glory rather than as calls for divine help. Muslims believe they will be judged on the righteousness of their lives on earth and that the good will be rewarded with eternal life in paradise

THE QUR'AN

God's revelations to Muhammad are codified in the Qur'an, which is the essential basis of Islamic belief. Unlike the Old or New Testaments, it is not a narrative account of the Prophet's life or a retelling of his teachings—it is God's own words as they were spoken by the angel Gabriel. The word Qur'an means "recitation." Reciting aloud the poetic language of the Qur'an remains the most profound expression of faith. Because the Qur'an contains God's actual words, in Arabic, the language itself acquired enormous prestige, becoming the common language in all Islamic lands. Arabic script—also privileged by its use in the Qur'an—was adopted for other languages, including Turkish and Persian. The importance of the Qur'an and its Arabic text elevated the art of calligraphy.

Qur'ans survive in fairly large numbers, even from early periods. Copying the Qur'an is an act of devotion, and because of their sacred nature, worn or damaged Qur'ans were not destroyed. Today, even though Qur'ans are mass-produced, the physical text is still handled with reverence.

While the Qur'an is the ultimate guide for Muslims, they also refer to the *hadith,* accounts of the Prophet's deeds and sayings, as recorded by his followers.

THE FIVE PILLARS OF ISLAM

{ THE FIVE PILLARS OF ISLAM }

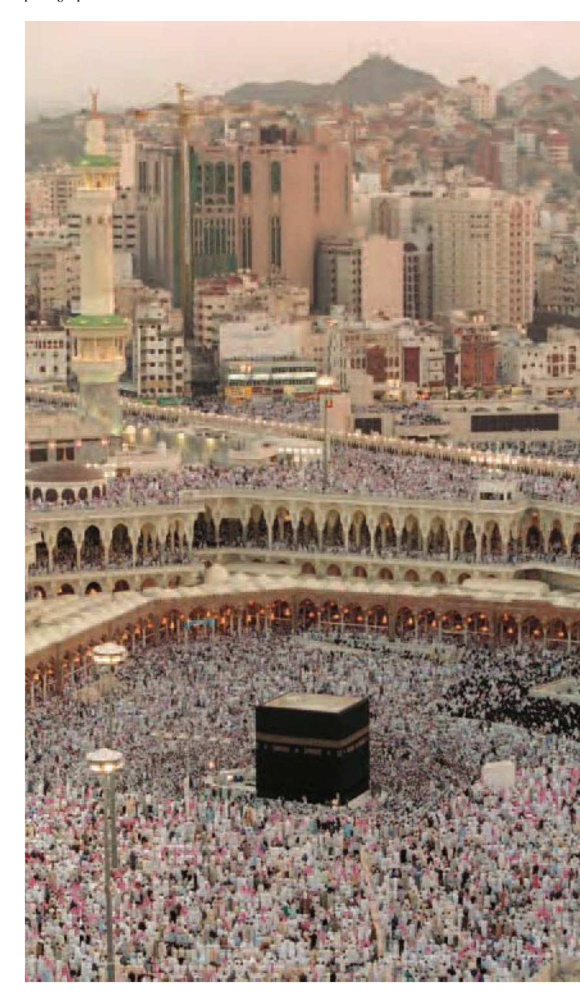
Profession of faith
Daily prayers
Alms for the poor
Fasting during Ramadan
Pilgrimage to Mecca

Without a formal priesthood, Islam makes few liturgical demands. It asks of believers five fundamental requirements, known as the Five Pillars:

- First and most important is the **profession of faith,** called the *shahada:* "There is no god but God and Muhammad is the messenger of God." These words—in Arabic *La ilaha illa'allah, Muhammadun rasul Allah*—are whispered in the ears of the new born and the dying. As part of the call to prayer, they echo daily in Muslim communities across the globe. Profession of the faith before two Muslim witnesses is all that is needed to become a Muslim: accepting the one true God and Muhammad as his prophet.
- **Daily prayers,** the *salah,* are made five times: after first light, at noon, in the afternoon, following sunset, and in the evening. Before praying, Muslims wash to prepare the body and mind, removing physical impurities and mental distraction. Prayers, said in a precise order of words and motions, are directed toward Mecca. The prayer ritual includes recitations from the Qur'an, postures of praise and humility, contemplation, and finally the sharing of peace with other believers—"peace be with you and the mercy of Allah." Prayers can be performed anywhere, but men are expected to gather at the mosque for midday Friday prayers, when a sermon is preached.

- **Alms for the poor** are collected in the form of a religious tax, the *zakat*—a word that means purification and signifies the benefit gained by recipient and giver alike. Muslims believe the *zakat* will be repaid many times over by the rewards of paradise. Individual donations are also made to religious foundations, hospitals, and to fund public works like fountains.
- All adults who are physically able are called to **fast during the month of Ramadan.** From sunrise to sunset, Muslims abstain from food, drink, and sexual relations. This sacrifice aids in turning the mind's focus from worldly concerns. Believers must also avoid unjust practices and pay special care to others. The entire Qur'an is read during the month, in daily segments. The end of Ramadan is marked by the festival of 'Id al-Fitr, a three-day celebration when alms are distributed to the poor and gifts exchanged.
- The **pilgrimage to Mecca,** the *hajj,* is made once in his or her life by every Muslim who is physically and financially able to undertake the journey. The *hajj* is an annual event that brings together Muslims from across the globe (a lesser pilgrimage can be undertaken at any time). Pilgrims wear simple robes to eliminate differences in nationality and status and to emphasize their shared faith and humility before God. The *hajj* takes place in Mecca and sites nearby over many days during the final month of the Islamic calendar. It culminates in the feast of sacrifice, the 'Id al-Adha, which commemorates the faith of Abraham, whom Muslims, like Christians and Jews, believe made man's original covenant with God.

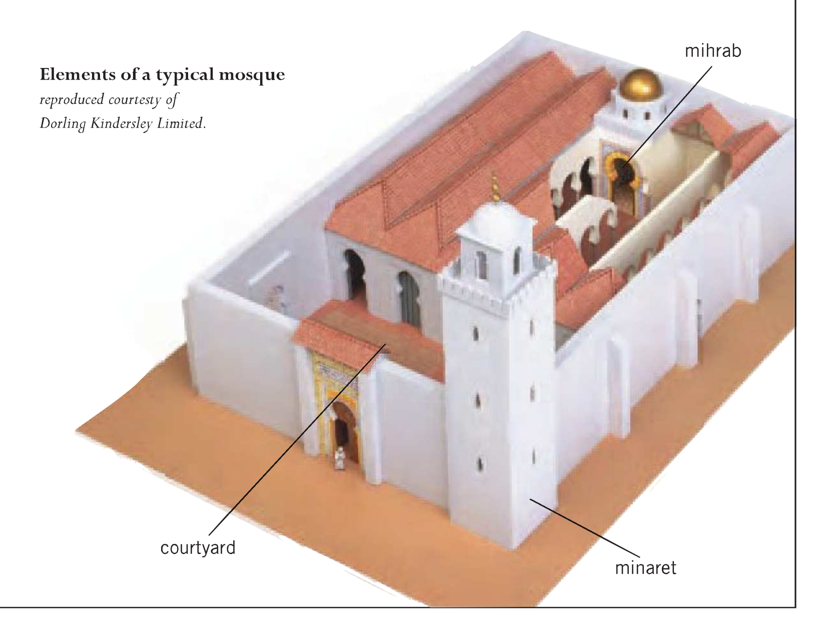
Pilgrims gathered around the Ka'bah in Mecca, 2002
photograph © Manoocher / Webistan / CORBIS



{ A TYPICAL MOSQUE }

- Arcades and buildings around a central courtyard provide areas for reflection and study;
- A fountain provides water so the faithful can wash before prayer;
- A large, roofed prayer hall, a mostly empty space, provides room for kneeling and prostration;
- A niche, called the *mihrab,* identifies the *qiblah* wall (the one in the direction of Mecca). It not only provides the focus for prayer but memorializes the spot where the Prophet had preached in Medina.

Elements of a typical mosque
reproduced courtesy of Dorling Kindersley Limited.





Minaret from the mosque at Samara
Iraq, 842–852
photograph SEF/Art Resource, NY

THE MOSQUE

The prototype for all mosques was the Prophet's own house in Medina, where his followers gathered in an arcaded courtyard for prayer and to hear Muhammad's words. A roofed area protected them from weather and the midday sun. Muhammad, leaning on a spear or staff, preached in front of the wall that was in the direction of Mecca.

One feature that became typical of mosques was not found in the Prophet's house—the minaret, the tower from which the faithful are called to prayer by the muezzin. The first muezzin, an Abyssinian slave who was a trusted companion of Muhammad, called followers from the rooftop of the Prophet's house. The first minarets may not have been associated with mosques at all. Or, they may have been built for another purpose, perhaps to mark the mosque's position within the crooked streets of ancient towns. Minarets have assumed a number of different forms, from a ziggurat spiral at Samarra (opposite) to the spires of Ottoman Turkey (see slide 3).

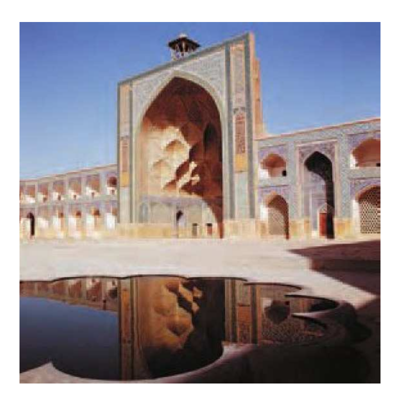
Because they functioned in many ways within the Islamic community—as a place for communal prayer and individual study, and as a center for civic life—mosques grew to encompass many distinct structures. Some became sprawling complexes with *madrasas* (religious schools), cemeteries, and even markets.

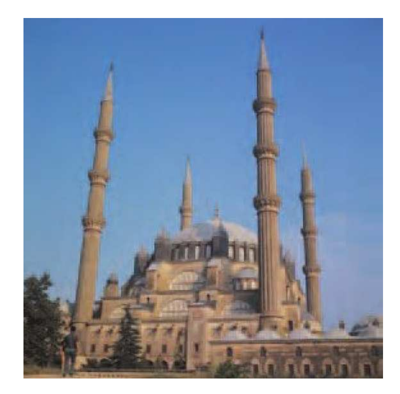
RESOURCES

- Cook, Michael. *The Koran: A Very Short Introduction.* London: Oxford University Press, 2000.
- Nasr, Seyyed Hossein. *The Heart of Islam: Enduring Values for Humanity.* San Francisco: Harper Publishers, 2002.

SLIDES 1-3:
THREE MOSQUES







1. **Courtyard of the Great Mosque**
   Damascus, Syria, early 8th century
   photograph Carla Brenner
2. **Courtyard of the Great Mosque**
   Isfahan, Iran, 11th–12th century
   photograph © Roger Wood / CORBIS
3. **Selimiye Mosque**
   Edirne, Turkey, 1569–1575
   photograph Art Resource, NY

These slides illustrate three styles of mosque architecture.

The Great Mosque in Damascus was built by the Umayyad caliph al-Walid I (ruled 705–715). It was described by the fourteenth-century traveler Ibn Battuta as "the most magnificent mosque in the world, the finest in construction and noblest in beauty, grace and perfection; it is matchless and unequalled." Al-Walid built mosques in Damascus, Medina, and Jerusalem as expressions of Islam's new wealth and political confidence. Today only the Damascus mosque retains most of its original form.

When the Umayyads moved their capital from the Arabian desert to Damascus, they brought evolving Islamic art closer to the orbit of Byzantine, and ultimately classical, influences. The mosque site had been a Roman temple precinct and included a church (which al-Walid offered to buy). Al-Walid's building incorporates columns and capitals from the temple, and its prayer hall follows the basic design of the three-aisle Christian basilica (turned sideways). Its decoration looked to classical models. Mosaics reminiscent of Roman wall painting, possibly made by Byzantine artisans, covered the courtyard walls. They present lush landscapes, with abundant trees, running rivers, and a combination of real and fanciful architecture. Most modern scholars believe that, on some level, the mosaics reflect an image of paradise, a place—unlike the desert home of Islam—that is verdant and well-watered. What is missing is any representation of people or animals: even these early mosque builders made a strict division between religious and secular settings. While the form of the Great Mosque of Damascus, with its arcaded court and dome to emphasize the *mihrab,* would be reinterpreted many times, its mosaic decoration would be replaced by calligraphy, arabesques, and geometric patterns.

USE THESE SLIDES IN DISCUSSING

- *the function and layout of a mosque*
- *the use of figural versus nonfigural art*
- *the influence of Byzantine and Sasanian traditions*
- *the Umayyad, Seljuk, and Ottoman periods*

FOR MORE CONTEXT

- Macaulay, David. *Mosque.* New York: Houghton Mifflin Company, 2003.



Mosaics from the Great Mosque of Damascus
photograph Carla Brenner

Our second mosque type was introduced by the Seljuks in Iran. Among the earliest examples is the Great Mosque at Isfahan, begun in the tenth century. Today, the huge complex—150 meters on its longest axis and with hundreds of domes—reflects successive building campaigns and the mosque's many functions as center of the community. It even engulfed the city bazaar.

The architecture is distinguished by the use of *iwans*—open arched rooms—centered in each of the four courtyard walls. The largest *iwan,* in the *qiblah* wall, served as the prayer hall; smaller ones were probably used by religious teachers. Their openings are framed by elaborate surrounds, called *pishtaqs,* decorated with carved stone or brilliantly colored tiles.

Built for the son of Süleyman the Magnificent, the third mosque is representative of the type introduced by Ottoman architects. Built on a square plan, the prayer hall is dominated by a central dome, rising massively above a cascade of secondary domes and semidomes. Exterior buttressing and large windows create a large light-filled interior space. Slender, pointed minarets mark the corners of the prayer hall, helping to make the space "legible" from the outside.

We know the names of very few Islamic architects, but the man who designed the Selimiye mosque is an exception. Sinan (1491–1588) was the greatest Ottoman architect and the Selimye mosque, built when he was in his eighties, is considered his greatest work. Probably of Greek origin, Sinan was recruited through the *devshirme* system, rising into the sultan's elite jannisary guard. In 1538 he was made the chief court architect to Süleyman the Magnificent. Probably most of his training—like that of all Islamic architects—was practical, acquired as a military engineer responsible for building defenses, bridges, and other public works.



Palace of Sasanian emperor Shapur I
Cestiphon, Iraq, 242–272
photograph Scala/Art Resource, NY

The *iwan* was an architectural form inherited from the Sasanians. This palace in Ctesiphon, near the future site of Baghdad, is among the few Sasanian buildings that survive. The *iwan* served as the entrance to the king's audience hall.



Hagia Sophia
Istanbul, Turkey, 6th century
photograph Vanni/Art Resource, NY

Ottoman mosques consciously reflect the church of Hagia Sophia, built in Istanbul (then Constantinople) during the sixth century by the Byzantine emperor Justinian. Until modern times it was the largest domed space in the world. When Constantinople fell to the Ottoman armies of Mehmet II in 1453, it was converted to a mosque.

SLIDE 4:
A MOSQUE PULPIT

A sermon *(khutba)* is typically part of the service during midday Friday prayers. It is delivered from a minbar, a tall pulpit placed beside the mihrab. The minbar reflects the raised seat from which Muhammad spoke in Medina, but it was more than just a platform for the preacher; because the ruler's name and titles were read during the *khutba,* minbars were also symbols of authority.

Early minbars were portable and wheeled into place when needed, but they soon became permanent fixtures and, in fact, are usually the largest furniture in a mosque. This one stands some twenty feet high. Its form is typical: a towerlike structure with steps approached through a doorway and leading to a canopied platform at the top.

The surface is richly decorated. Inscriptions quote verses from the Qur'an and praise the Mamluk sultan Qa'itbay. His almost thirty-year rule, 1468–1496, was an unusually long one. He founded a number of new religious institutions and restored many older ones in Egypt and Syria. Probably this minbar was made for a mosque in Cairo, although we do not know which one.



4. **Minbar for Sultan Qa'itbay**
Egypt (Mamluk) probably Cairo,
between 1468 and 1496,
Wood with ivory inlay
Victoria and Albert Museum, London



Minbar for Sultan Qa'itbay (detail)
Marquetry on the sides of the pulpit makes economical use of scarce wood and expensive ivory. Sixteen-rayed stars and spokes define a variety of polygons. The star is based on a four-part division of a circle: imagine a square rotating within it. The elaboration of geometrical designs reached a peak in the fourteenth century, in Egypt, Syria, Iran, and Spain.

USE THIS SLIDE

- *in discussing Islamic art's use of geometric pattern*
- *for math activities using repetition and rotation*
- *in describing decoration and furnishing of a mosque*

SLIDE 5:
A VIEW OF MECCA

5. **Tile commemorating the pilgrimage to Mecca**
Turkey (Ottoman) probably Iznik, 17th century
Fritware with underglaze colors
Victoria and Albert Museum, London

An inscription at the top of this tile quotes Qur'an 3.96-97: "Truly, the first House founded for men was surely that at Mecca for a blessing and a guidance to the world. Therein are manifest signs—Abraham's station, and whosoever enters in is safe. There is due to God from man a pilgrimage unto the House, for whosoever can find his way there." This injunction is the fifth pillar of Islam, the *hajj,* or pilgrimage to Mecca. Probably the tile was bought by someone to commemorate his completion of the *hajj*.

Below the inscription is a bird's eye view of the Sacred Mosque at Mecca, heart of the pilgrimage. In the center stands the Ka'bah—the draped rectangular shrine that is set with a meteorite called the Black Stone. The Qur'an says the Ka'bah was built by the Jewish patriarch Abraham as the first house of God. It had already become the most important shrine in Arabia in pre-Islamic times and was a source of great prestige and wealth for Mecca. Many gods were worshiped there before Muhammad rid the shrine of idols and idolaters, restoring it to the one true God. The Ka'bah defines the *qiblah* or "point of adoration"—the direction toward which Muslims address their prayers.

Other monuments shown and labeled on the tile remain part of the *hajj* rites, including the "station of Abraham," where the patriarch stood when he built the Ka'bah, and the well of Zamzam, from which pilgrims drink. A minbar is also depicted.



Spandrels of an arch
Turkey (Ottoman), probably Iznik, late 16th century
Fritware with underglaze colors
Victoria and Albert Museum, London

The Ka'bah tile was likely made in the Iznik pottery works, which were a royal monopoly of the Ottoman sultans. More typical of Iznik works, however, are these spandrels, with their color and jagged floral design.

USE THIS SLIDE

- *in discussing the Five Pillars of Islam* (hajj)
- *in discussing Muhammad's life and early history of Islam*
- *in discussing the features of a mosque* (qiblah, mihrab)
- *in discussing Iznik pottery*

FOR MORE CONTEXT

- Read accounts of the *hajj* in Wolfe, Michael, ed. *One Thousand Roads to Mecca: Ten Centuries of Travelers Writing about the Muslim Pilgrimage.* New York: Grove Press, 1999.

SLIDE 6:
A QUR'AN FOR RAMADAN

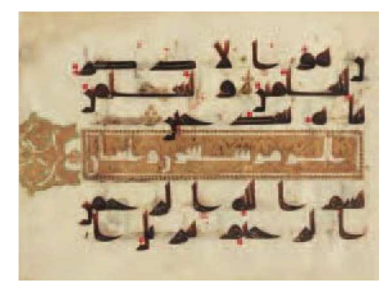
Large, beautifully decorated Qur'ans, like this one possibly made in Shiraz around 1370, were often produced in sets of thirty separately bound sections—one to be read aloud each day during the month of Ramadan. This one is written in the script known as *muhaqqaq,* which was used mostly for Qur'ans and whose name means "certain."

The Qur'an contains 114 chapters, called suras, arranged from the longest to the shortest. In the earliest Qur'ans, chapters were separated by decorative bands, but soon chapter headings became elaborately decorated frames, giving the name of the chapter (though Western writers normally refer to them by number) and the number of verses it contains. Eventually they indicated whether Muhammad had received this revelation in Mecca or Medina.

The oldest Qur'an fragments date from the eighth century, when a group of heavy angular scripts generally labeled as "kufic" (after the town of Kufa in Iraq) became standard for writing the sacred text. Their austere and monumental simplicity was felt appropriate for this exalted use. Most kufic Qur'ans are written on parchment in a horizontal format. Cursive scripts replaced kufic in most Qur'ans (except those made in the far west) beginning around 1000. And paper, cheaper and easier to work with, replaced parchment. In 751, near Samarkand, Muslim forces defeated a Chinese army. According to legend, two captured soldiers revealed the Chinese secret of paper-making. Islamic scribes quickly adopted it and, in turn, introduced it to the West.



6. **Manuscript containing one thirtieth of the Qur'an**
Iran (probably Shiraz), c. 1370–1380
Ink, gold, and colors on paper; tooled and gilded leather binding
Victoria and Albert Museum, London



Folio from a Qur'an
Abbasid dynasty, 9th century
Ink, color, and gold on parchment
Freer Gallery of Art, Smithsonian Institution, Washington, D.C.: Purchase F1930.60

This kufic leaf comes from one of the earliest Qur'ans to have illuminated chapter headings. It contains parts of suras 38 and 39. The projecting palmette, right, may imitate paddle-shaped wooden writing boards. In the middle of the second line, the winged palmette marks the break between verses. The red dots are diacritical marks that make it easier to read the script, which does not indicate short vowels.

USE THIS SLIDE

- *in describing the Qur'an*
- *in describing what happens during Ramadan*
- *in discussing calligraphy as an art form*
- *in discussing exchange with China and the West*

FOR MORE CONTEXT

- students can see the Arabic text, read an English translation, and hear Arabic recitation of the Qur'an at several web sties, including **www.quran.al-islam.com**

{ SECTION 2 }

SCIENCE AND LEARNING

Between the ninth and the fourteenth centuries, Islamic science outpaced that of any other culture. Scientist-philosophers had wide-ranging interests, most of them working in many disciplines we consider quite distinct today—medicine, mathematics, astronomy, geography, philosophy, optics. Islamic learning is celebrated for having preserved many of the texts of ancient Greece, passing along a classical tradition that might otherwise have been lost. But Islamic scholars did not simply accept these ancient "authorities," in the way that, say, scholastic philosophers did in medieval Europe. Stressing experiment and observation, they questioned and tested those authorities, laying the foundation on which modern science is based.



A school scene
Tabriz, Iran c. 1540
Detached folio; opaque watercolor, ink, and gold on paper
Arthur M. Sackler Gallery, Smithsonian Institution, Washington, D.C.: Purchase—Smithsonian Unrestricted Trust Funds, Smithsonian Collections Acquisitions Program, and Dr. Arthur M. Sackler S1986.221

The Abbasid caliph al-Ma'mun (ruled 813–833) transformed the library in Baghdad into what he called the "House of Wisdom." At once library and school, it also supported an observatory and a staff of copyists, translators, and bookbinders. Delegations were sent to Constantinople and other cities in search of manuscripts to buy. Within seventy-five years, many Greek works had been translated into Arabic, including philosophical and scientific books by Aristotle, Galen's work on medicine, Euclid's on geometry, and Ptolemy's on geography and astronomy. In many cases it was these Arabic versions that were translated into Latin and disseminated to the West. The House of Wisdom also collected and translated works by Persian and Hindu thinkers. And its scholars produced commentaries and original works of their own.

Probably the greatest of the scholars in al-Ma'mun's time was the mathematician and geographer known as al-Khwarizmi (c. 800–c. 847). His book *On Calculation with Hindu Numerals* is primarily responsible for the adoption of what we today call "Arabic numerals." His revolutionary work on quadratic equations was translated into Latin in 1145 and served as a principal mathematics textbook for the next four hundred years. A part of its title—in Arabic *al-Jabr* (the hunt)—introduced the word algebra into the languages of Europe. Al-Khwarizmi's name itself gives us "algorithm."



The evolution of "Arabic" numerals
reproduced courtesy of Dorling Kindersley Limited

Using al-Khwarizmi's work in geography—he specified the number of miles in one degree of the earth's surface—Islamic scientists improved on previous geographies and were able to determine the circumference of the earth with remarkable accuracy. Their figure was only forty-one meters off modern measurements. Geography and the related science of astronomy were important to rulers with vast empires and to every Muslim, who needed to know the direction of Mecca and times for prayer.

Some of the most significant contributions of Islamic science were in medicine. Islamic physicians enjoyed particular renown—during the Crusades Salah al-Din (Saladin) sent his personal physician to tend the ailing Richard the Lionhearted, king of England. While contemporaries in many parts of the world sought supernatural causes of disease, Islamic medicine drew on the rational approach of ancient Greek writers such as Galen and Hippocrates and that of the Persian medical school at Jundishapur. While bacteria and the germ theory of disease were unknown, Islamic scientists emphasized the importance of hygiene. When the first hospital was built in Baghdad in the ninth century, the site was selected following experiments in which pieces of meat were left in various locations to determine where decay was slowest to set in. Around the same time, the caliphate began to examine physicians about their knowledge and to license them. Close control was also maintained over the production of medicines. Baghdad pharmacies provided a range of remedies based on plants as well as sophisticated inorganic compounds. Surgeons removed cataracts and tumors, and performed delicate vascular operations.

{ ARABIC NUMERALS AND THE ORIGIN OF *X* }

Initially Arabic used letters for numbers, just as Greek, Latin, and Hebrew did. But a much easier system had been devised in India that used nine digits, place notation, and zero—an entirely new concept. The new system seems to have arrived in Baghdad in the late eighth century, very likely introduced by traders. By the tenth century it had reached Spain. Mathematicians like al-Khwarizmi showed how much easier multiplication and division could be done by manipulating the new "Hindu" numbers. They were particularly suited to figuring with pen and paper (which was itself in increasingly supply after its introduction from China in the eighth century).

In 1202 Leonardo Fibonacci, a Pisan merchant who had lived in Tunis, wrote a treatise about Arabic numerals. The original Arabic forms of the numbers were modified in the West. In part this was due to Europeans' use of an abacuslike device that put the digits on rotating blocks. Our numerals 2, 3, 4, and 7 are 90-degree rotations of their Arabic counterparts. Our 5, 6, and 8, on the other hand, come from elsewhere: 5 and 6 from Visigothic script, 8 from an abbreviation of the Latin "octo" (eight) that placed the first and last letters one above the other.

Why is it we call unknowns *x* ? Al-Khwarizmi used the Arabic word *shay,* meaning "thing," for the unknown quantity he sought to find. In Spain, where the letter x was pronounced "sh," the word was transcribed as *xay* and eventually abbreviated as simply *x.*

{ AN ALCHEMIST VOCABULARY }

Islamic scientists, like those in the West, pursued alchemy, hoping to turn base metals into gold. Many of the techniques of chemistry can be traced to their researches. Their influence is reflected in the large number of Arabic terms adopted by European languages. Alchemy is one. So is chemistry. Others include alcohol, alembic, alkali, amalgam, borax, and elixir.

Takyuddin and other astronomers at the Galata observatory founded in 1557 by Süleyman the Magnificent, from the *Sehinsahname*
Turkey, 1581
University Library, Istanbul, ms f 1404, fol. 57a / Bridgeman Art Library



Ophthalmology was a particular specialty of Islamic medicine, beginning with al-Kindi (c. 800–870), who first identified the parts of the eye. Ibn al-Haytham (c. 965–1039) explained how human vision operates and is regarded as the father of optics. It had long been thought that the eye sent out rays that struck the object seen—much in the way a bat echolocates. Ibn al-Haytham was able to demonstrate that the eye instead only perceives light reflected from the object. He proved his point by making a pin-hole camera.

Another Islamic doctor considered the circulation of blood in the heart. His work contradicted the accepted theories of Galen and anticipated the work of English physician William Harvey by 350 years. Al-Razi (865–925) was the first scientist ever to isolate the clinical symptoms of a particular disease, smallpox. He enumerated seven principles for good health, including moderation in food and drink, cleanliness, and good mental and physical habits.

The most widely studied work on medicine and disease was produced by Ibn Sina (980–1037), better known in the West as Avicenna. The *Canon of Medicine,* translated eighty-seven times, remained the most important medical text in Europe until the seventeenth century. Said to have written some 275 books in Arabic and his native Persian, Ibn Sina was called the "prince of philosophers" by his contemporaries, but some of his ideas also drew criticism as contrary to the teachings of Islam. He studied Aristotle in a neo-platonic spirit, believing (like Plato) in the existence of universal concepts. He distinguished the possible from the necessary—and made a proof of the primacy of God's existence.

Another Islamic interpreter of Aristotle was Ibn Rushd (1126–1198) from Spain (called Averroës in the West). Like Ibn Sina he was a physician as well as a philosopher. His philosophical works made their greatest impact in the West. Believing both religion and philosophy to be true, he sought to harmonize them. His ideas would help secularize Western science and philosophy, separating them from theology and the limits of church dogma.

Islamic scholars came from all parts of the Islamic world, and not all of them were Muslim. The *Guide for the Perplexed* and *Mishna Torah* by the Jewish philosopher Maimonides (1135–1204) were translated into Hebrew from the Judeo-Arabic in which they had been written. Maimonides, known in Arabic as Ibn Maymun, was born to a family of Jewish intellectuals in Islamic Córdoba, in Spain. He served as court physician to Salah al-Din and produced books on medicine and astronomy in addition to theological and philosophical works.

Ibn Khaldun (1332–1406), born in Tunis, is considered Islam's greatest historical philosopher and the creator of social science—his histories sought not only to present an accounting of events but to explain the social, economic, geographic, and cultural factors that influence them. His researches led him to a cyclical view of history and a belief in the rise and fall of empires.

Islamic science had begun to lose its brilliance before the Mongol invasions of the thirteenth century. Many reasons are attested; perhaps most important was that the caliphate had become fragmented and the unified culture it had supported no longer existed.

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- Nasr, Seyyed Hossein. *Islamic Science: an Illustrated Study.* London: Tajir Trust, 1976.
- Schacht, Joseph, and C. E. Bosworth, eds. *The Legacy of Islam,* 2d ed. London: Oxford University Press, 1974.
- See the National Library of Medicine's online exhibition feature *Islamic Culture and the Medical Arts* and catalogue of Islamic medical manuscripts at **www.nlm.nih.gov**

SLIDE 7:
A MATHEMATICAL JEWEL



7. **'Abd al-A'immah**
Astrolabe
Iran (Safavid), Isfahan, dated 1715
Brass with pierced and engraved decoration
Victoria and Albert Museum, London

An astrolabe is a mechanical computer that can be used to determine several kinds of astronomical information. It can tell the time of day, even at night, determine latitude, and fix the time of events for casting horoscopes. For Muslims, especially traders and other travelers who needed to know the direction of Mecca and the hour of prayers, the astrolabe was indispensable. They called it the "mathematical jewel."

Telling the time for prayer was more complicated than you might imagine. Rather than occurring at specified times on a twenty-four-hour clock, the times for prayer are determined by an older system of time-keeping, whose hours were reckoned from sunrise (the first hour). Noon was the end of the sixth hour and sunset the end of the twelfth. Depending on the season and the latitude, the length of different hours varied, and by different amounts. Only as reliable clocks became available in the seventeenth century, did most of the world start to count equal hours of sixty minutes each, irrespective of the "solar" time of day.

Astrolabes work by projecting the celestial sphere onto a flat plate—an idea first conceived by the ancient Greeks. Probably Islamic scientists learned of the astrolabe through translations of Greek texts in the eighth and ninth centuries. The oldest surviving Islamic astrolabes date from the tenth century—when one treatise described a thousand uses for it. They remained in popular use in the Islamic world into the nineteenth century, long after other inventions supplanted them in the West.

This astrolabe is shown dismantled. Three separate plates map the celestial projection at specific latitudes. (Others provide a shadow square for solving simple trigonometry problems and give astrological information.) These plates fit into the dished base, marked in degrees around the rim. Over the plates rotates the openwork *rete,* essentially a star map. Its circle marks the elliptic (the projection of the sun's annual path in the sky), its leafy points fixed stars. On the back of the instrument, a rotating sight, the *alidade,* is used to determine the altitude of the sun or a star. This information is used to position the *rete.* Once set, the astrolabe shows the entire sky, both visible and unseen. The back of the astrolabe gives scales for finding the direction of Mecca.

USE THIS SLIDE

- *in discussing Islamic science*
- *to introduce astronomical terms (elliptical, zenith, azimuth, etc.)*
- *in discussing trade*

FOR MORE CONTEXT

- learn to use an astrolabe at **www.astrolabes.org**
- look up times for prayer in various cities at **www.islamicfinder.org**

SLIDE 8:
IN CASE OF SPIDER BITE

Along with works by Greek physicians Galen and Hippocrates, Dioscorides' *Materia medica—the Pharmacy*—was one of the most widely used scientific texts in pre-modern times. Originally written in Greek some time between 40 and 90 A.D., it was translated into Arabic in the mid 800s in Iraq. It was one of the first scientific manuscripts to be translated and among the earliest illustrated (the first illustrated copy was completed in 1083). Later translations were made in Spain and Iran, and scholars added supplements to Dioscorides' original text. Many Latin translations were also made. For more than fifteen hundred years the *Materia medica* remained the primary source of information about drugs made from plants, animals, and minerals—in the Islamic world and in Europe.

Dioscorides, a Greek from Cilicia in what is today Turkey, claimed to have first become interested in medicinal plants as a youth. His travels as a soldier in the Roman army must have allowed him to collect a large number and variety of specimens. He describes about five hundred plants and more than four thousand different remedies, emphasizing that his work differs from earlier herbals because he had observed most of the drugs directly and examined their effects with an empirical approach. Ironically, his work was later accepted as something like medical dogma; only in the mid sixteenth century did European scientists renew his spirit of investigation and experimentation.

This leaf is from a copy signed by Abdallah ibn al-Fadl, who was perhaps the painter as well as the calligrapher. Its lively style suggests that it may have been made in Baghdad. Narrative scenes like this one are probably based on illustrations in contemporary literary works. The physician—seated on a carpet and resting against a fine cushion—instructs his assistant from a book (perhaps it is this same text!) as the younger man blends a poultice.

The text, from a chapter about poisons, describes antidotes for the sting of the phalangium spider. Recipes for different poultices are given, one by combining ashes from a fig tree with salt and wine, the other using pounded roots with barley and vinegar. In either case, the wound is to be cleaned first. For several days the patient is to bathe in warm water and drink a medicine made with various plant ingredients.



8. **Two physicians preparing medicine from an Arabic translation of the *Materia medica* by Dioscorides**
Iraq, 1224
Opaque watercolor, ink, and gold on paper
Freer Gallery of Art, Smithsonian Institution, Washington, D.C.: Purchase F1932.20

USE THIS SLIDE

- *in discussing Islamic science and medicine*
- *in discussing the transmission of classical culture through Islamic copies*
- *in discussing the modern scientific method*
- *to compare its painting style with a later illumination (slide 13)*

SLIDE 9:

THE WORLD AS THEY FOUND IT



9. **Al-Idrisi**
World map
dated 1553 from an original of 1154
Bodleian Library, Oxford, ms. Pococke 375, fols. 3v–4r

Between the seventh and ninth centuries, Islamic trade extended east to China by both land and sea routes; it went south to Zanzibar, and north to Russia. Trade provided both the necessity for and a means of knowing about the earth. The study of geography flourished.

The foremost geographer of his day was al-Idrisi. Although he traced his descent to the Prophet, the details of al-Idrisi's life are mostly unknown. He may have been born in Morocco around 1100. He apparently traveled extensively—it was said he had even visited France and England—and studied at the university in Córdoba. He spent fifteen years compiling a geography for the Norman king of Sicily, Roger II Guiscard. Al-Idrisi called his work the Book of Roger. It was completed only weeks before his patron's death in 1154 and was accompanied by a map in seventy sections. This round map reflects a simplified one al-Idrisi prepared to accompany a shorter version of his geography. From our perspective al-Idrisi's maps are upside down: south appears at the top.

Sicily, which had earlier been under Muslim control, was then on the edge of the Islamic world. Norman kings, who had established themselves in southern Italy in the eleventh century, welcomed Islamic culture—and Islamic scholars—into the vibrant intellectual life of their courts. Roger actively encouraged all areas of learning but seems to have been especially interested in geography, personally interviewing merchants, sailors, pilgrims, and Crusaders who arrived in his capital at Palermo. Roger asked al-Idrisi to produce a new geographical work, and he made special arrangements for production of new maps. The geography was to describe the location of the world's cities, their climate, and the distances between them. Teams of "certain intelligent men" accompanied by draftsmen were dispatched abroad to obtain new research. Their first-hand observations were used to expand, correlate, and correct the geographical data.

Written in Arabic and Latin, the text begins with a short introduction. Here al-Idrisi accepts the "opinion of philosophers" that the earth is a sphere. He likens its stable suspension in the heavens to that of the yolk inside an egg. His descriptions and maps followed the ancient division of the world into seven climate zones, a system derived from the second-century Greek geographer and astronomer Ptolemy.

USE THIS SLIDE

- *in discussing Islamic science*
- *in discussing the impetus of East-West trade on geographical research*
- *to consider the political/ideological implications of different modern map projections*

FOR MORE CONTEXT

- Read the about the famous Islamic traveler Ibn Batutta, who covered 75,000 miles over twenty years, in the December 1991 *National Geographic* (the National Geographic web site has supporting teacher materials). Excerpts of his eyewitness accounts can be read online at Fordham University's Internet Medieval Sourcebook, **http://www.fordham.edu/halsall/sbook1k.html**

{ SECTION 3 }

PALACES AND POETRY

When early Islamic leaders adopted the style of Byzantine and Sasanian emperors, they isolated themselves from their subjects and surrounded themselves with unparalleled luxury. In their palaces, all the senses were engaged: silk rushed smoothly across the skin, gardens delighted the eye with color and the nose with fragrance, water rippling from fountains and pools soothed the ear and spirit, wine warmed the body, poetry the emotions. One Ghaznavid sultan ordered construction of a pavilion made of halva, a sesame sweetmeat. Mongol rulers lived in tent palaces that occupied acres and were furnished with the finest textiles.

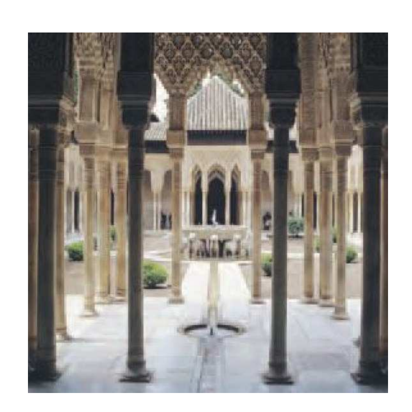
This display was meant not simply to indulge the court but to awe outsiders with opulence. A Byzantine ambassador visiting Baghdad in 917 was left to wait two months for an audience with the caliph. Finally he was led through a seemingly endless succession of palaces, gardens, and zoological parks, past elephants and hundreds of lions. In the eleventh century, an Iranian poet and traveler described the Fatimid palace:

> *I saw a series of buildings, terraces, rooms.... There was a throne in one of them that took up the entire width of the room. Three of its sides were made of gold on which were hunting scenes depicting riders racing their horses, and other subjects; there were also inscriptions written in beautiful characters. The rugs and hangings were Greek satin and woven precisely to fit the spot where they were to be placed. A balustrade of golden lattice-work surrounded the throne, whose beauty defies description. Behind the throne were steps of silver. I saw a tree that looked like an orange tree, whose branches, leaves, and fruit were made of sugar. A thousand statuettes and figurines also made of sugar were placed there.*
>
> [quoted in Robert Irwin, *Islamic Art in Context* (New York: Harry N. Abrams, Inc., 1997), 115]

Palaces were also administrative centers, whole cities in their own right. The Alhambra (slide 10) probably accommodated some forty thousand people: the ruler, his wives and children; their tutors, attendants, and slaves; senior administrators and judges; and young men who were being trained for the military and bureaucracy. Although palaces encompassed both public and private space, the two were often strictly divided. Ottoman sultans listened to deliberations of officials and the ruling council, which took place on the palace grounds, but they remained invisible inside screened enclosures.

RESOURCES

- Atil, Esin. *The Age of Sultan Süleyman the Magnificient.* Washington, D.C., and New York: National Gallery of Art and Harry N. Abrams, Inc., 1987.
- Irwin, Robert. *The Arabian Nights, a Companion.* London: Tauris Parke Paperbacks, 1994.
- Ruggles, D. Fairchild. *Gardens, Landscape, and Vision in the Palaces of Islamic Spain.* University Park, Pa.: Penn State University Press, 2003.
- Read online histories from the Fordham University's Internet Medieval Sourcebook: the Abbasid caliphs are described in Masoudi's *Book of Golden Meadows,* c. 940, **http://www.fordham.edu/halsall/source/masoudi.html**



10. **Court of the Lions, the Alhambra**
Granada, Spain,
mid 14th century
photograph Adam Lubroth / Art Resource, NY

SLIDE 10:

A PALACE IN SPAIN

Only two Islamic palaces survive from the pre-modern period: the Alhambra, built by the Nasrid rulers of Granada, and the Ottomans' Topkapi palace in Istanbul. The Alhambra was preserved by its Christian conquerors—they captured it in the 1490s—as a symbol of victory, while most other Islamic palaces were allowed to crumble. Built by a relatively minor dynasty, the Alhambra—despite its rich beauty—offers only a hint of the luxury that would have been found in the palaces of greater rulers.

The name Alhambra means "red [palace]" and refers to the warm color of its stone against the distant mountains. It was not a single structure but, like other Islamic palaces, a royal complex. It encompassed five separate palaces and numerous other buildings. The imposing exterior walls and towers give little hint of the luxury within, which was meant to reflect paradise on earth.

Inside and outside are ingeniously joined. Gardens unite courtyard and interior. Distances are seen across expansive vistas or in small glimpses that reward a sudden change of direction. Light is used like an artist's medium: shaded walkways give onto bright terraces and dazzling pools; shafts of sun flow into shaded recesses. Flowing water—brought by aqueduct from surrounding hills and piped through an elaborate system of floor channels—brings a soothing sound to rooms inside and out.

The Court of the Lions, seen in this slide, is one of two from the medieval Alhambra to survive more or less unchanged. It was used for pleasure rather than official functions. Tall, slender columns support multilobed arches and vaults elaborated with the faceted shapes of *muqarnas.* In one room, five thousand *muqarnas* in the ceiling fracture entering light into a prismatic display. It was intended to reflect the dome of heaven. As sunlight moved through the room, shifting patterns created an effect like the rotation of stars and planets in the nighttime sky. The room and its effect are described in verse decorating the wall below:

> *And how many arches rise up in its vault supported by columns which at night are embellished by light!*
>
> *You would think that they are the heavenly spheres whose orbits revolve, overshadowing the pillar of dawn when it bravely begins to appear after having passed through the night.*
>
> [quoted in Sheila Blair and Jonathan Bloom, *Islamic Arts* (New York: Phaidon Press, 1997), 189]

USE THIS SLIDE

- *to describe the luxury of court life*
- *in outlining the Islamic period in Spain*
- *in describing the importance of gardens in Islamic culture and the imagery of paradise as a garden*

FOR MORE CONTEXT

- Grabar, Oleg. *The Alhambra (The Architect and Society).* Cambridge, Mass.: Allen Lane, 1978.
- See the exhibition feature about Islamic Spain, *Caliphs and Kings,* on the web site of the Smithsonian's Freer/Sackler Galleries, **www.asia.si.edu**

SLIDE 11:
MUSICIANS AND POETS

In palace gardens, caliphs and courtiers enjoyed picnics and wine, lyric poetry and music—as the figures do on this ivory box. Inside each roundel, a couple sits under a leafy canopy. The musician on the left plays a horn or flute, the one on the right a lute. Their companions hold wine cups or flasks, and one of them sniffs a bouquet. They are surrounded by luxuriant foliage, birds, and other animals that lend an idyllic feel. Inspired by wine, soothed by music and the fragrance of flowers, these courtiers would be moved to compose extemporaneous verses, a skill expected of them. We could imagine them singing lines like these from al-Shari al-Taliq, a poet who was a member of Córdoba's ruling family:

Just as the sun gives the garden back its breath,
So the beloved's brightness restores the lover burnt up with desire.
Just as the rose's petals are covered with dew,
So my love's cheek is sprinkled with drops of perspiration.
It bursts into flower beside a pure yellow narcissus,
Which I thought was concealing a tender love for the rose…
How lovely they are, those stars of the garden
That have risen towards the horizon from their flowerbeds.

[quoted in Tim Stanley, et al., *Palace and Mosque* (London and Washington, D.C.: Victoria and Albert Museum and the National Gallery of Art, 2004), 83]

About thirty ivory caskets like this one are known; inscriptions on some indicate they were made in Córdoba (although this one may have been made in Toledo by craftsmen who emigrated from Córdoba). Under Spain's Umayyad caliphs, between the mid tenth and early eleventh century, Córdoba had flourished to become the greatest city in Europe and a center for the production of luxury goods.

Most of the ivories, like this one, are decorated with court scenes. Originally they were painted, and many were studded with small jewels. The blank band running around this box would originally have held an inscription—perhaps a few lyric lines like al-Taliq's above or a panegyric to the caliph likening the well-being of his state to the abundance of a garden. It may have been removed because the casket was made into a Christian reliquary; this is how most of them survived. The silver mounts are later additions.



11. **Casket with courtly scenes**
Spain (Umayyad), c. 1000
Carved ivory with later silver mounts
Victoria and Albert Museum, London

{ AL-ANDALUS }

Between the eighth and fifteenth century, most of Spain—called al-Andalus in Arabic—was a part of the Islamic world. Poets called it a paradise, rich with the flowing water of rivers and the shade of trees. Culturally, it was the most sophisticated area in all Europe, with centers for the arts and learning in cities like Córdoba, Seville, and Granada. Its population was a vibrant mixture of Jews, Muslims, and Christians.

USE THIS SLIDE

- *in describing the luxury of court life*
- *in outlining the Islamic period in Spain*

FOR MORE CONTEXT

- Listen to music from Islamic Spain. Many recordings are listed at **www.medieval.org/emfaq/cds/sny62262.htm**

SLIDE 12:
OBJECTS OF DESIRE



12. **Dish with image of a polo player**
Iran, probably Kashan, 1208,
Fritware with overglaze luster
Victoria and Albert Museum, London, Purchased with the assistance of the National Art Collections Fund and the Bryan Bequest

{ SUFISM }

Sufism developed early in Islamic history, as a reaction to the worldliness of the Umayyad dynasty and from devotion to the more mystical parts of the Qur'an. The name is derived from the coarse woolen cloaks ascetic Sufis adopted. In later times several different Sufi orders emerged—probably the best known is the Dervishes in Turkey. Sufis seek divine love and knowledge through a direct experience of God. Sufi concepts of mystical love inform much Persian poetry, and other poetic traditions within the Islamic world.

A courtier's eloquence in verse was expected to be matched by physical elegance. Sprawling palace grounds provided ample room for polo matches, archery contests, and other games that gave young men a chance to display their skill and prowess.

The handsome polo player on this bowl—almost hidden in the dense garden around him—is an unattainable object of desire. The poet's longing is inscribed in the verses that appear on the rim and around the vessel:

O Heart! Do you see any cause for joy?
Do you see anything but one whose glances are like scattering jewels?
While I live I am content to wish for a moment together.
People are all as you see them.
It has not been my habit, where lust is concerned,
To speak of the pain in my heart to anyone.
Despite this, I wish to say one word:
I have died for love of you! Respond to my cry for help!

[quoted in Tim Stanley, et al., *Palace and Mosque* (London and Washington, D.C.: Victoria and Albert Museum and the National Gallery of Art, 2004), 85]

The poet's desire is not simply for the beautiful polo player: it is a yearning to be reunited with God. This neo-platonic idea was a basic component of the Sufi movement. As it would be for Renaissance poets in the West, the unfulfilled pursuit of earthly love was a metaphor for the quest for spiritual union. Through music, poetry, and ecstatic dance, Sufis believed it was possible to regain a state of communion with the Creator. Compare these lines by the great Persian Sufi poet Jalal al-Din Rumi (1207–1273) about a reed taken from a mattress of straw to become a flute:

Hearken to the reed forlorn
Breathing, even since 'twas torn
From its rushy bed, a strain
Of impassioned love and pain.
The secret of my song, though near,
None can see and none can hear.
Oh, for a friend to know the sign
And mingle all his soul with mine!
'Tis the flame of Love that fired me,
'Tis the wine of Love inspired me,
Wouldst thou learn how lovers bleed,
Hearken, hearken to the reed.

[quoted in Sheila Blair and Jonathan Bloom, *Islam: A Thousand Years of Faith and Power* (New Haven and London: Yale University Press, 2002), 63]

USE THIS SLIDE

- *to introduce Sufism*
- *in discussing life at Islamic courts*
- *in describing lusterware pottery (see also slide 18)*

FOR MORE CONTEXT

- Al-Din Rumi continues to be one of the world's best-selling poets. Many translations are available.

SLIDE 13:
A TALE OF ROMANCE

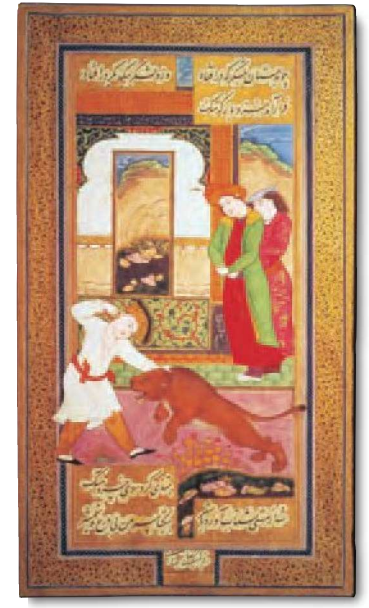
This scene illustrates a moment from Persian poet Nizami's *Khamseh,* one of the two most celebrated—and often painted—works of Persian literature. The other (and earlier) *Shahnama (Book of Kings),* recounts exploits of Iran's heroic past. By contrast the *Khamseh,* literally "quintet," contains a philosophical/mystical tale and four romances. It is often described as a turning point in Persian poetry, the first time dazzling language and images serve love and other human emotions rather than epic action.

Nizami traces the love and courtship of the last great Sasanian king, Khusraw II (d. 628), and the beautiful Armenian princess Shirin—her name means "sweet." They fall in love by seeing each other in portraits, but their face-to-face meeting is long delayed. Before they can marry several obstacles await. In the nighttime episode painted here, Khusraw, still in pajamas, saves Shirin from a lion. Eventually the couple is "united in perfect love," unhappily short-lived: Khusraw is assassinated soon after.

Although the historical Khusraw and Shirin—and Nizami's poem—are much earlier, their lives very much reflect the luxury and refinement of the Safavid court where this illumination was painted: luxurious dwellings, days picnicking and hunting, nights of dance and poetry:

> *How perfect for the lovers were these ecstatic days! The air sparkled; the sky was never so blue, the grass so thick with flowers. And never did Khusraw and Shirin leave one another's sight. In the mornings they would summon their attendants; then Shabdiz and Golgun [their magnificent horses] would be led from the stable and they would ride to the polo field or to the hunt. Chasing after birds and game, Khussaw was astonished at the prowess of Shirin; her skill with the bow and her mastery of her horse's reins matched that of any man. She was a lioness, not a gazelle, and his heart pursued her eagerly. Yet at night when the dancing began, so light was her step that she seemed never to touch the ground.*
>
> *Every night there were sumptuous feasts. Scarcely was one banquet finished than the next began, and each was embellished with music, song and wine, and poetry in praise of love.*
>
> [P. J. Chelkowski, *Mirror of the Invisible World: Tales from the Khamseh of Nizami* (New York: Metropolitan Museum of Art, 1975), 30–31]

Riza' was one of the most renowned illuminators in seventeenth-century Iran. Unlike calligraphers, painters had long remained anonymous. Signatures appear finally in the fourteenth century, but only at the end of the fifteenth century can scholars link individual artists and their work. By the time Riza' came to prominence, painters had begun to assume personalities and the marks of personal style. In part, this was because the market for paintings



13. **Riza' 'Abbasi**
Illustration from Nizami's *The Romance of Khusraw and Shirin*
Iran (Safavid), Isfahan, 1632
Ink, gold, and colors on paper
Victoria and Albert Museum, London

{ STYLE }

Unlike their contemporaries in Europe, Islamic artists did not try to paint the natural world as it looks—rather they showed it as it was known. Instead of using one-point perspective, they often chose a viewpoint from above or opened space out to the viewer in a way that gave a wider or more complete view. Figures are frequently sized according to their importance, not their relative positions in space: a sultan, even if we understand him as seated in the background, might be larger than his attendants in the foreground. Islamic artists also flattened space with decorative patterns and instead of shading objects to make them appear three-dimensional, used areas of flat color.

was changing. Manuscripts had often been dismembered as they became worn and then reassembled into albums. Now a wider audience, less able to afford an entire book, sought single sheets. In his early career, Riza' had been known for portraits of courtly figures, drawn with a light calligraphic line, delicately fluttering scarves and turbans, and large areas of primary color. In midlife, however, contemporaries reported that he fell in with "lowlifes and wrestlers," and for many years turned away from court subjects. When he returned to them, his line was coarser, his colors darker and earthier. This painting of Khusraw and Shirin is dated 1632, only three years before his death.

The 'Abbasi epithet used by Riza' is a title granted him by Iran's Shah 'Abbas I (1587–1629). The shah was an active promoter of all the arts, from manuscript illumination to luxury textiles. He is said to have employed seventy-two painters and even to have kissed the hand of Riza'.

USE THIS SLIDE

- *in describing Islamic arts of the book*
- *in discussion of figural versus nonfigural art*
- *in describing the Safavid court*
- *to consider style and representation in Islamic and European art*

FOR MORE CONTEXT

- See Canby, Sheila R. *Persian Painting*. New York: W. W. Norton & Co. Inc., 1993.
- Read more from the story of Khusraw and Shirin in Chelkowski, P. J. *Mirror of the Invisible World: Tales from the Khamseh of Nizami.* New York: Metropolitan Museum of Art, 1975. Note that the scene illustrated here is not included.
- Read Pamuk, Orhan, Erdag M. Goknar (trans.). *My Name is Red.* New York: Vintage Books, USA, 2001. This novel, set in sixteenth-century Istanbul, considers questions of personal style and modes of representation that arise after a murder within the sultan's manuscript workshop. (The novel includes violent and sexual scenes.)

SLIDE 14:
A CARPET FIT FOR A SHAH

In the West, the "Oriental rug" is the most familiar of all the Islamic arts, perhaps not inappropriately since textile production, and especially silk weaving, was so highly regarded in the Islamic world. It is difficult for us—after the Industrial Revolution has made fine patterned cloth an everyday item—to imagine the prestige textiles commanded. They were traded, paid in tribute, and given as diplomatic presents to foreign dignitaries. Whole state economies were based on them; their production has been likened to that of the modern automotive industry. In most periods they were more precious than gold.

Although flat-woven textile fragments survive from the earliest Islamic periods, the oldest carpets—rugs with knotted pile—are later. Perhaps earlier Islamic illuminations illustrate them, but it is difficult to distinguish woven, embroidered or knotted cloth (see slide 8). Pile carpets begin to appear in Italian paintings, and examples from Anatolia survive from the fifteenth century. The oldest whole carpets from Iran—Persian carpets—were made in the early sixteenth century. This is one of the most famous.

More than seventeen feet long, it is known as the Chelsea carpet because it was bought in the nineteenth century by the Victoria and Albert Museum from a dealer in London's Chelsea neighborhood. Little is known of its history before that, but it must have been made in Iran in the early sixteenth century. Carpets of this size and quality came from urban court-sponsored workshops. Nomadic tribes wove carpets on portable looms that could be staked out parallel to the ground wherever their tents were erected. The geometric designs of their rugs reflect the rectangular grid of the vertical warp and horizontal weft threads. Vertical looms in court workshops allowed a finer a much finer set of warp and weft. This freed carpet design from the rigidity of the vertical-horizontal grid. For the first time weavers were able to execute free-flowing patterns, often drawn by the best court artists—medallions, scrolling arabesques, and finely detailed animal and human figures. Carpets could become "painting in a different medium."

Many motifs were adopted from the arts of the book; central medallions, for example, appear to copy tooled leather book covers. In this large carpet the common scheme of a central



14. **The "Chelsea Carpet" (detail)**
Iran (Safavid), early 16th century
Knotted wool pile with silk warp and weft
Victoria and Albert Museum, London

USE THIS SLIDE

- *in describing palace interiors*
- *in describing the important role of luxury textiles in Islamic economies and trade*

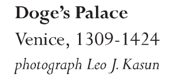
FOR MORE CONEXT

- Learn more about knotted carpets by visiting a local merchant.
- Research attempts to eliminate child labor in contemporary carpet weaving.

medallion with quarter medallions in the corners is repeated twice. In the center, the medallion is split and shifted to the edges, opening up the field. The background is filled with flowers and vines inhabited by animals, some grazing, others in combat. The detail is so fine, even the seeds bursting from ripe pomegranates are seen.

The presence of animals suggests that the Chelsea carpet was not intended for use in a mosque. More likely, it was made for a palace—whether building or tent. The sheer size of some carpets hints that they must have been used outdoors. In any setting, they would define and distinguish space, creating a zone of honor. The ruler's seat was normally placed over a carpet's central medallion. Here, where depictions of Chinese-inspired blue-and-white vessels appear in the center, we can imagine actual porcelains placed there. Other elements of Chinese design appear on the Chelsea carpet: cloud bands, dragons, phoenixes, and the fishpond in the very center.

Some two thousand carpets survive from the Safavid period. In part, of course, this reflects their relatively late date, but it is also an indication of increased production in state-sponsored workshops. Safavid rulers took an active interest in textiles and other luxury wares, setting up state industries to produce goods for domestic and foreign markets. Shah Tahmasp, who was said to have designed textiles himself, established works in Kashan, Isfahan, and Kirman—all familiar names to today's carpet lovers.



Doge's Palace
Venice, 1309-1424
photograph Leo J. Kasun



{ SECTION 4 }

ARTS OF THE OBJECT IN EXCHANGE

Palace culture valued and took pleasure in artistry. Court taste and patronage elevated everyday objects into works of art. We have seen (in Section 2) how Islamic learning was transmitted to the West and helped preserve the classical tradition. The arts of the object were a more tangible means for the exchange of artistic culture, and one that operated multidirectionally. Until the sixteenth century, the Middle East was literally the center of the known world, the hub of an almost global trade. People and goods moved through Islamic lands to and from China and Europe, India and Africa, bringing their own artistic cultures and taking some of Islam's away with them.

The period when the Mongol dynasties ruled from Iran to China is often called the Pax Mongolica. People and goods moved with unprecedented ease between the Mediterranean and China, along the various overland routes of the silk road. For a millennium or more, luxury textiles were the most important manufactured goods in trade, and the raw materials to make them were quantitatively the largest part of cargoes. Also moving westward were Chinese porcelains and celadon wares. They were highly prized in the Islamic world, inspiring local imitations and innovation. The Chinese art that so impressed Marco Polo reached the West directly through trade, but also through the intermediaries of Islamic interpretations.

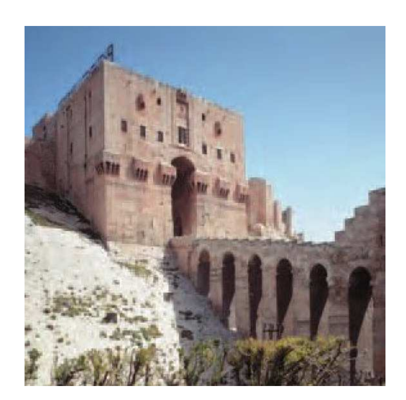
In places like southern Italy and Spain, where Islamic states had been established, and in cities like Venice that were busy centers of trade, Islamic objects—glass, textiles, metalwork, ceramics—and the influence of Islamic design were right at hand. But further north, these exotic goods did not arrive until the Crusades. The Crusades exposed western Europeans to the sophistication of Islamic (and Byzantine) cultures: to learning and artistry more advanced than their own. Many Islamic objects were taken home by Crusaders and found their way to church treasuries, where they were preserved as precious objects and often used as reliquaries.

In Renaissance Italy, Islamic goods were highly desirable. As a Florentine writer suggested in 1384, "Really all Christendom could be supplied for a year with the merchandise of Damascus.... There are such rich and noble and delicate works of every kind that if you had money in the bone of your leg, without fail you would break it to buy of these things." [quoted in Rosamond E. Mack, *Bazaar to Piazza: Islamic Trade and Italian Art,* 1300–1600. (Berkeley, Calif.: University of California Press, 2002), 1] Medici inventories valued carpets as highly as sculpture by Donatello. Not only were these "noble and delicate works" eagerly sought—they were very influential on Italian design.

RESOURCES

- Bornstein, C. V. and P. P. Soucek. *The Meeting of Two Worlds: The Crusades and the Mediterranean Context.* Ann Arbor: The University of Michigan Museum of Art, 1981.
- Ferber, S., et al. *Islam and the Medieval West.* New York: State University of New York Press, 1975.
- For a detailed look at the influences on European Renaissance art in various media, see Mack, Rosamond E. *Bazaar to Piazza: Islamic Trade and Italian Art, 1300–1600.* Berkeley, Calif.: University of California Press, 2002.
- See the web feature, *Artisitic Exchange: Europe and the Islamic World*, which looks at the influence of Islamic art on European works in the National Gallery of Art, **www.nga.gov/exhibitions/artexchange_ss.htm.** It is reproduced as a PDF on the image CD.

SLIDE 15:
AN ISLAMIC CASTLE



15. **The Citadel of Aleppo**
Aleppo, Syria, 1193–1215
with subsequent rebuilding
photograph © Angelo Hornak/CORBIS

[SALAH AL-DIN]

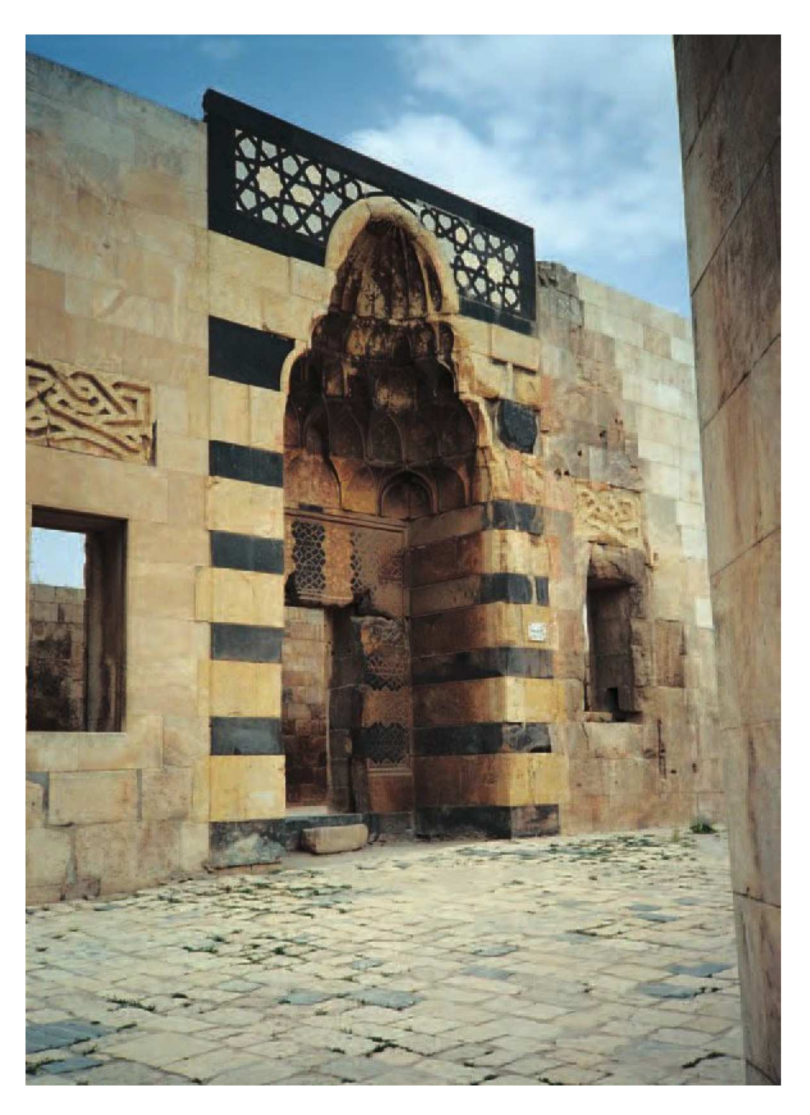
Ghazi was the son of was Salah al-Din, founder of the Ayyubid dynasty and better known in the West as Saladin. He defeated Crusader armies at the battle of Hattin in the Second Crusade, restoring Jerusalem to Islamic rule. Equally celebrated for valor and chivalry, Salah al-Din was extolled by Islamic and Western poets alike.

The citadel of Aleppo is one of the most outstanding examples of medieval military architecture to survive anywhere. Its appearance today largely reflects the way it looked when the Ayyubid prince al-Malik al-Zahir Ghazi rebuilt it to withstand assault and siege by Crusader armies. As Crusader forces built their own castles, Islamic and Christian castle builders learned from each other.

Between 1193 and 1215, Ghazi turned the citadel into a powerful stronghold, surrounded by a deep moat and steep wall (glacis). He restricted entrance to a single portal reached only over a high bridge. The gate was a major fortification in its own right. Five huge iron doors sealed off the route, giving onto a passageway that had five right-angle turns. Invaders were forced to change directions six times—and while this twisting narrow space and near pitch darkness slowed their advance, defenders attacked with arrows or boiling oil from openings in the floor above.

The citadel was much more than a military camp, however. It was the center of government and administration. Inside its strong walls, Ghazi constructed an entire city, with a lavishly decorated palace, bath houses, parade grounds, and a garden. There were two mosques. Granaries, wells, and cisterns ensured supplies of food and water during sieges. Geographer Ibn Shaddad, writing sometime between 1214 and 1228, called the citadel "proverbial for its beauty and strength.... It astonishes he who views it."

In 1986 the citadel, in fact all of ancient Aleppo, was designated a UNESCO (United Nations Educational, Scientific, and Cultural Organization) World Heritage Site. In 2000 a major program of restoration began; this work and excavation of the citadel continue. The Great Mosques of Damascus and Isfahan and the Alhambra (slides 1, 2, and 10) are also World Heritage sites.



Entry to the Ayyubid palace in the citadel
Aleppo, Syria, early 13th century
photograph Carla Brenner

This entry to the citadel palace illustrates a characteristic Ayyubid taste for alternating colored stone. The archway is a honeycomb of *muqarnas*. These tiered vaults, which appeared quite early in Islamic architecture, create multiple faces for repeating patterns, and they served an architectural function in making the transition from a square base to a round dome (or arch) on top.

USE THIS SLIDE

- *to supplement discussion of East-West exchange*
- *to present information about the Crusades*

FOR MORE CONTEXT

- Learn about World Heritage sites at **www.unesco.org.**
- Learn more about medieval military architecture in the West. See Macaulay, David. *Castle.* Boston: Houghton Mifflin Company, 1982.
- Although no biographies of Ghazi are available in English, students may want to read about his famous father, who was once imprisoned in an earlier structure of the Aleppo citadel.
- Consider the Crusades from a different point of view. See, Hillenbrand, Carole. *The Crusades: Islamic Perspectives.* Edinburgh: Routledge, 1999.

SLIDE 16:
THE "LUCK OF EDENHALL"



16. **The "Luck of Edenhall"**
Egypt or Syria (Ayyubid or Mamluk), 13th century; case: English or French, 14th century
Enameled and gilded glass; leather case
Victoria and Albert Museum, London, Purchased with the assistance of the Pilgrim Trust, the National Art Collections Fund, the Goldsmiths' Company, the Salters' Company, the Drapers' Company and the Merchant Taylors' Company

The beaker was probably made in Aleppo, Syria, but its fame occured on English soil, where it had been taken by a returning Crusader. The quality of Syrian glass was renowned; in Europe the technology to make clear glass did not even exist. With its gilded and enameled decoration, the beaker must have seemed just short of miraculous when it arrived in Edenhall, a noble house in the far north of England. It was precious enough to have probably been used as a chalice. A leather case was made for the beaker in the fourteenth century bearing the sacred IHS monogram.

Over the centuries the real history of the glass was forgotten and replaced by legend, like this one reported in an eighteenth-century magazine:

> *A party of Fairies were drinking and making merry round a well near the Hall, called St. Cuthbert's well, but being interrupted by the intrusion of some curious people they were frightened, and made a hasty retreat and left the cup in question: one of them screaming out*
>
> *"If this cup should break or fall Farewell the Luck of Edenhall."*

Just such a demise was imagined by a German romantic poet, translated by Henry Wadsworth Longfellow:

> *As the goblet ringing flies apart*
> *Suddenly cracks the vaulted hall*
> *And through the rift the wildfires start*
> *The guests in dust are scattered all,*
> *With the breaking Luck of Edenhall.*

Enameled and gilded vessels were the most highly prized type of Islamic glass. Production of it was a specialty in Egypt and Syria, areas controlled by the Ayyubids and Mamluks during the thirteenth and fourteenth centuries. It is an extremely demanding technique. Gold and colored enamels, themselves made of opaque powdered glass, were bound in an oil medium and painted on the surface. Then the glass was refired to fix them. Careful monitoring of kiln temperatures and multiple refirings were required because the gold and different enamel colors fuse at different temperatures.



Lamp with nonfigural decoration
Egypt or Syria (Mamluk), between 1342 and 1345
Enameled and gilded glass
Victoria and Albert Museum, London

Mosque lamps like this one were often made of gilded and enameled glass. Many were inscribed with verses from the Light sura (24.35): "God is the Light of the heavens and the earth; the likeness of His light is as a niche wherein is a lamp (the lamp in a glass, the glass as it were a glittering star)...."

USE THIS SLIDE

- *in a general discussion of the Crusades*
- *to illustrate how the West learned about Islamic art*
- *to describe Islamic glass*

FOR MORE CONTEXT

- Hess, C., et al. *The Arts of the Fire: Islamic Influences on Glass and Ceramics of the Italian Renaissance.* Malibu, Calif.: J. Paul Getty Trust Publications, 2004.
- Learn more about Islamic glass in a feature on the Metropolitan Museum of Art web site, **www.metmuseum.org/toah/hd/igls/hd_igls.htm**
- Learn more about the Crusades and read letters written by Crusaders from the Holy Land at the Fordham University's Internet Medieval Sourcebook, **www.fordham.edu/halsall/sbook1k.html**

SLIDE 17:
PRAISE FOR A MAMLUK SULTAN



17. **Tray decorated with inscriptions**
Egypt (Mamluk), probably Cairo, between 1314 and 1363
Brass with gold and silver inlay
Victoria and Albert Museum, London



Ewer with "Veneto-Saracenic" decoration
Italy, probably Venice, 16th century
Brass with silver inlay; copper repairs
Victoria and Albert Museum, London

Islamic-inspired designs were applied to vessels of distinctly European shape, like this ewer made in Italy in the sixteenth century.

For many centuries, metalwork was a leading art form that influenced decoration in other media. Inlay with gold or silver seems to have become common from the twelfth century, spreading westward from Seljuk Iran. What has been called a "silver famine" beginning about the same time may have prompted craftsmen to adopt inlay as a way to make scarce resources go further. But the popularity of the glittering bronze or brass vessels probably also responded to a pious avoidance of gold and silver, which were eschewed by the Prophet.

This elaborate large tray is an excellent example of Mamluk metalwork. It extols the sultan al-Malik al-Mansur. The reign name—which means "the king made victorious [by God]"—was used by two different men, both of whom ruled in the middle fourteenth century. Against a background of dense arabesques, multiple inscriptions praise the sultan. The shortest, written in large script around the center, reads, "Glory to our master the sultan, the wise, the diligent, the just, the warlike king—may his victory be glorious." Its long strokes radiate like rays of light. The message is repeated and amplified in other inscriptions; even the small roundels offer "Glory to our master the sultan."

An increasingly prominent use of inscriptions was a feature of Mamluk art. It reflects a military society's natural affinity for hierarchy and public display. Compare the lively hunting and battle narratives on an earlier basin, usually dated between 1290 and 1310.

Islamic metalware was traded extensively around the Mediterranean, and its scrolling decoration became popular in many parts of Europe. So many inlaid pieces—some signed in Arabic—were found in the region around Venice that scholars initially assumed them to have been made there by Islamic artists. Because non-Christians were denied guild membership, however, it is more likely most of them were produced by Italian craftsmen. (Guild restrictions like this were common in the West but not in Islamic lands.)



Muhammad Ibn al-Zayn
Baptistry basin of Saint Louis
Egypt or Syria, 14th century
Brass with silver inlay
Musée du Louvre, Paris, photograph Réunion des Musées Nationaux/Art Resource, NY

This brass basin, among the very finest works of Islamic metalwork, was signed six times by its maker, an indication of his status. It found its way to the baptistry of St. Louis in Paris, where into the nineteenth century it was used to baptize infants of the French royal family. Animals parade gracefully in bands flanking scenes of royal hunts and battles, narratives that disappear from Mamluk vessels, even those not destined for the mosque.

USE THIS SLIDE

- *to show influence of Islamic design on the West*
- *to illustrate the artistry and technique of Islamic metalwork*
- *to discuss Mamluk art*
- *in discussing calligraphy*

SLIDE 18:
AN ITALIAN PORTRAIT OF MEHMET THE CONQUEROR



18. **Dish with luster decoration**
Italy, probably Deruta, c. 1500–1540
Earthenware with overglaze luster
Victoria and Albert Museum, London

Invented in Iraq in the ninth century, the luster technique enjoyed long and wide popularity. Egypt, Syria, Iran, and Islamic-controlled Spain all developed important centers for luster production—and so eventually did Renaissance Italy. This plate is an interesting illustration of exchange: it was made using an Islamic technique in an Italian workshop, and depicts Ottoman sultan Mehmet II, the Conqueror, who captured Constantinople in 1453.

East or West, the technique for making lusterware pottery was a closely guarded secret. An Italian in 1558 wrote, "Many potters make the luster kilns on the floors of houses which are locked and under close guard, for they look on the manner of making the kiln as an important secret and say that in this consists the whole art." [quoted in Tim Stanley, et al., *Palace and Mosque* (London and Washington, D.C.: Victoria and Albert Museum and the National Gallery of Art, 2004), 118]

Lusterwares made in Valencia, Spain, began to be imported to Italy in large numbers in the fifteenth century. They brought much higher prices than local pottery and inspired Italian craftsmen to develop their own wares. Because the island of Majorca was one of the trading centers that brought these goods into Italy, lusterware came to be called *maiolica.* Major centers of Italian maiolica grew up in the towns of Gubbio and Deruta, where this plate was probably made.

{ LUSTERWARE }

Pious Muslims followed Muhammad in eschewing vessels and tableware made of gold or silver. Probably this is one reason for the highly developed artistry of Islamic ceramics, especially the costly and difficult technique for producing the metallic sheen of lusterware. Vessels were fired with an opaque glaze. Then designs were painted in oxides of silver or copper and the vessel was fired again in a smoke-filled kiln. This oxygen-free (reduction) atmosphere drew off the oxygen from the metallic oxides, leaving behind a thin film of metal. Probably the process was first developed by glassmakers in Egypt and Syria. From the mid thirteenth century until about 1340, Kashan in northwestern Iran was the major center for lusterware vessels and tiles. Tiles, in fact, were more important than dishes—the Persian word *kashani* means tile.



Star and cross tiles
Iran (Ilkhanid), probably Kashan, dated 1262
Fritware with overglaze luster
Victoria and Albert Museum, London

USE THIS SLIDE

- *in conjunction with slide 12 to discuss the luster technique*
- *to discuss East-West exchange*
- *as a portrait of the Ottoman sultan Mehmet II*

SLIDE 19:
BLUE-AND-WHITES

Chinese ceramics made their way into the Middle East in the eighth century, appearing in the lavishly appointed palaces of the Abbasid court. Quickly growing demand for these fine wares presented Islamic potters with both inspiration and challenge.

Lacking access to the materials and techniques required to produce the hard, pure white porcelain that made the Chinese wares so desirable, Islamic potters improvised. Initially they copied the Chinese shapes and learned to mask the color of local clays with an opaque white glaze. In the eleventh or twelfth century, potters in Iran developed fritware, a quartz-based body that fired white all the way through, as porcelain did, although it was not as fine.

In the meantime, Islamic potters had been introducing styles of their own. While the perfection of Chinese porcelains resided in the understated refinement of shape and glaze alone, Islamic potters sought ways to add color and texture and pattern—an impulse characteristic in all Islamic art. The glazed surface invited decoration (see illustration page10). Plant and geometric motifs, calligraphy, and eventually figures were painted in cobalt blue over the glaze before firing. Although the very phrase "blue-and-white" immediately conjures an image of a Ming vase, it is possible that the first vessels with blue-on-white decoration were made in ninth-century Iraq. (It used to be widely accepted that the earliest blue-and-white wares were Islamic, but new evidence from China has prompted renewed discussion.)

As trade and contacts increased, influences operated in both directions. By the middle of the fourteenth century, Chinese potters had begun to add cobalt decoration under a clear glaze (see illustration page 48); by the end of the century wares with underglaze blue were being made in Syria, Egypt, and Iran; by the fifteenth century, they had begun to be made in Ottoman Turkey as well.

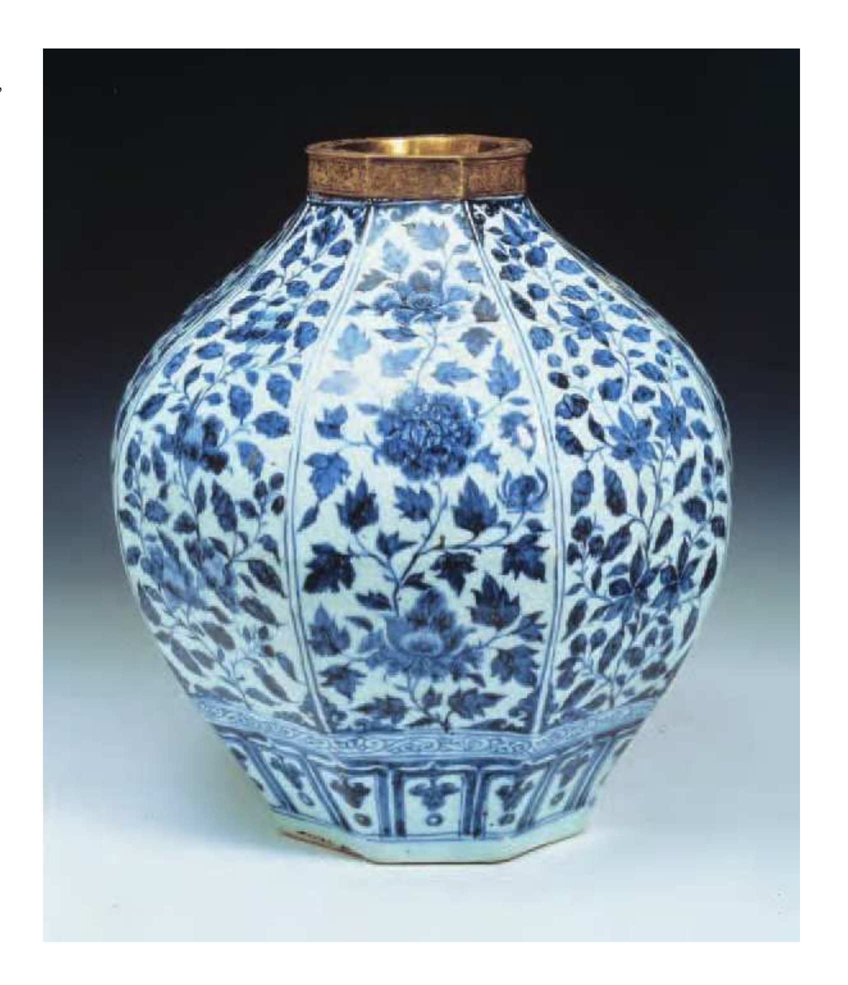
This fritware jar was made in seventeenth-century Iran, when the Safavid capital at Isfahan was a cosmopolitan center. Production of luxury goods was a state enterprise; Shah ʻAbbas had gone so far as to "import" Chinese potters and their families. The blue-and-white wares made in Isfahan include some close imitations of Chinese models but also pots whose decoration features Islamic designs.



19. **Blue-and-white storage jar**
Iran (Safavid), 17th century
Fritware with underglaze colors
Victoria and Albert Museum, London

USE THIS SLIDE

- *to talk about the silk road and the so-called Pax Mongolica that made exchange with China easier*
- *to compare Iran's organization of luxury production with contemporary trade sectors*



Chinese blue-and-white storage jar
China (Yuan), 14th century; rim: Iran (Qajar), 19th century
Porcelain with underglaze colors; brass rim
Victoria and Albert Museum, London

This Chinese jar, with underglaze decoration, was purchased in Iran. The metal rim was made there to repair damage.

SLIDE 20:
VELVETS, COMING AND GOING





20. **Length of Italian velvet**
Italy, 15th century
Silk velvet with metal thread
Victoria and Albert Museum, London

Length of Turkish velvet
Turkey (Ottoman) probably Bursa, 16th century
Silk velvet with metal thread
Victoria and Albert Museum, London

{ TEXTILE VOCABULARY }

The influence of Islamic textile arts is reflected in the many English words having Arabic or Persian origins, including taffeta (from the Persian "to spin"), damask (from Damascus), mohair, cashmere, satin, alpaca, chiffon, cotton, muslin (from the Iraqi city of Mosul), and many others.

Although ceramic and metalwork survive in larger numbers, textiles and the materials for their manufacture were more important in international trade. Works for the production of luxury cloth were essential industries in most Islamic countries. Invading Mongol armies were even said to spare the lives of weavers. A Western traveler to Iran in the seventeenth century claimed that more of the country's population was engaged in making fine cloth than any other occupation.

In Italy, too, textile production became an important craft, contributing substantially to the wealth of Florence and other Renaissance cities. Beginning in the 1330s, Italian design was revolutionized by what the Italians called "Tartar" cloths coming Central Asia, Iran, and Syria. Patterns and techniques became internationalized to the extent that a fourteenth-century inventory from Rome could not say whether a certain red and gold cloth had been made in nearby Lucca or in distant Mongol lands. A bit later, velvets produced in Iran were imitated by weavers in Venice or Florence, whose velvets were imitated in turn by Ottoman weavers in Turkey. Compare the two fabrics above: the one of the left was made in fifteenth-century Italy, the one on the right in Turkey in the sixteenth century.

USE THIS SLIDE

- *in discussing the multiple directions in which exchange operated*
- *the relative value of textiles in the Islamic world and contemporary parallels*



Textile with figural design
Iran (Safavid), late 16th-early 17th century
Silk velvet and metal thread
Victoria and Albert Museum, London, Purchased with the assistance of the National Art collections Fund, Mr. I. Schwaiger, Selfridge & Co. Ltd., Mr. A. F. Kendrick, Mr. O. S. Bergeryan, G. P. & J. Baker Ltd., and Mr. A. Bernadout
Safavid velvets like this one used in a coat derived their courtly scenes from illustrations of Persian poetry.

The two cloths are velvet, which became popular during the reign of Safavid Shah 'Abbas I (1588–1629). It was used for many purposes—from tent decorations to garments. Velvets are produced by pulling extra warp (vertical) threads to the surface of the fabric around thin wires. When the wire is removed the warps stand up in tiny loops, which can be left as tufts or sheared. The entire surface of a cloth or only pattern areas could be treated with this technique.

TEACHING ACTIVITIES

These activities may be used in any order and should be modified to suit the needs of your students.

SOCIAL STUDIES: INVESTIGATION

Investigating works of art can help us learn about the culture in which they were made.

Students should choose one of the objects from the image CD and print it out on a color printer.

First, ask students, using only their powers of observation and deduction, to speculate on the object, using traditional investigation questions like:

Who made it? Who was it made for?

What is it? What function does it serve?

Where was it made? When was it made?

Where does it reside now? Why is it important enough to belong in a museum, if it does?

How does it help us understand more about the culture in which it was made?

Second, direct students to research their objects, addressing the same investigation questions. Some suggested sources of information are listed in this teaching packet. See also the following web sites:

The Metropolitan Museum of Art's Timeline of Art History:
www.metmuseum.org/toah/splash.htm?HomePageLink=toah_l

Los Angeles County Museum of Art:
www.lacma.org/islamic_art/islamic.htm

Detroit Institute of Art:
www.dia.org/collections/ancient/islamicart/islamicart.html

PBS:
www.pbs.org/empires/islam/

The BBC (British Broadcasting service):
www.bbc.co.uk/religion/religions/islam/features/art/index.shtml

Third, have students present their research to the class. This can be in the form of a poster, PowerPoint talk, and/or research paper. Students should include at least one visual image/object to accompany their presentations, in addition to their research objects. A visual image could be:

- *a map of the country from which the object came*
- *a photograph of the setting in which the object was used*
- *examples of the materials used to make the object*

Visual aids help the audience understand and engage with the presentation and will encourage students to make their own concrete connections to the object.

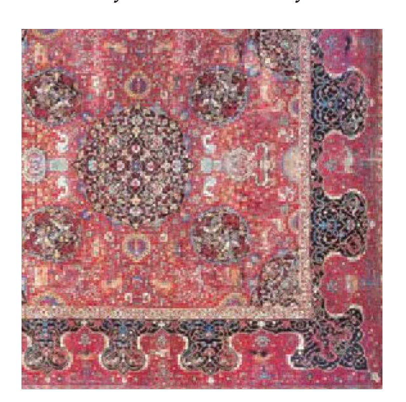
During the presentations, ask students to take notes.

Finally, once all presentations are completed, brainstorm ideas or themes that were common to many of the presentations. Write them on the board. What are some of things that can now be understood about Islamic art and culture?

CREATIVE WRITING: IT'S A MYSTERY

The works of art in this packet are rich in history and beauty. Some are even mysterious. For example, a glass goblet made in thirteenth-century Syria and now called the "Luck of Edenhall" has inspired fictional stories to explain its history. As an introduction, read the legend on page 42 to your students.

Then, try one of the story starters below to create a mysterious short story or poem.



Late one night I was suddenly awakened by a rustling noise outside my window. Through a space in the blinds, I saw a large rectangular carpet hovering above the willow tree. I opened the window, and the carpet …

The "Chelsea Carpet" (detail)
Iran (Safavid), early 16th century
Knotted wool pile with silk warp and weft
Victoria and Albert Museum, London



There was a quiet knock at the door—tap, tap, tap. I saw no one through the peephole, just an empty hallway. I opened the door for a better look. Nothing to the left, nothing to the right; but when I looked down, I saw an old wooden box on the floor at my feet. I picked it up and removed the lid. The shiny, object inside looked a little bit like a compass, but suddenly it …

'Abd al-A'immah
Astrolabe
Iran (Safavid), Isfahan, dated 1715
Brass with pierced and engraved decoration
Victoria and Albert Museum, London



My cousin and I were helping my grandmother clean out her attic. Yuck, it was full of cob webs. While sorting through boxes filled with old clothes and books, I came upon a dusty but beautiful blue-and-white jar. As I picked it up the lid fell off, and inside I saw a rolled piece of paper tied with a faded ribbon. I carefully removed the ribbon and unrolled the note. It was a poem about the jar, the contents of which made the hairs stand up on the back of my neck. It said …

Blue-and-white storage jar
Iran (Safavid), 17th century
Fritware with underglaze colors
Victoria and Albert Museum, London

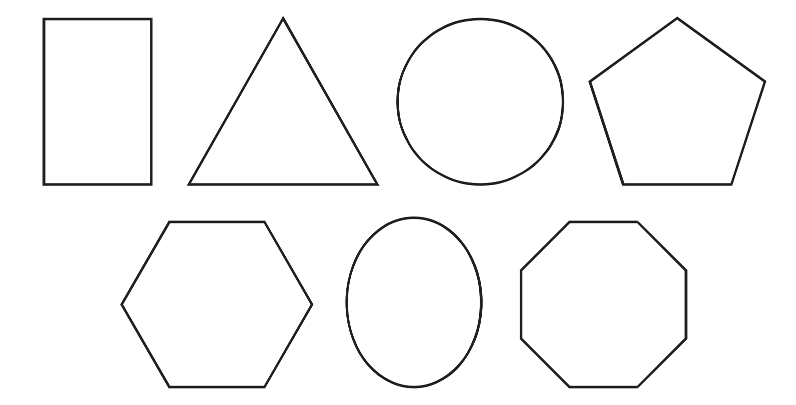
ART AND MATH: SHAPES AND PATTERNS

Many objects from Islamic culture are decorated with beautiful and intricate patterns of interlocking geometric shapes. Ranging from the simple to the intricate, geometric patterns can be found in all media, including manuscript illuminations, textiles, and wooden, metal, and ceramic objects. Geometric shapes, repetition, and variation reflect a fundamental Islamic belief in the interconnected, harmonious nature of all creation—the coming together of disparate elements into a unified whole.

The circle, a symbol of unity and heaven, is the foundation from which many patterns are developed. The various permutations of rotating triangles and squares within the circle form the basis for many geometric designs.

ACTIVITY 1

Did you know that there are only three geometric shapes that by themselves can form an interlocking pattern. Can you guess which they are? Choose from the shapes below and experiment to find the answer.



ACTIVITY 2

In some Islamic tilework, the tiles themselves bear the pattern shape.

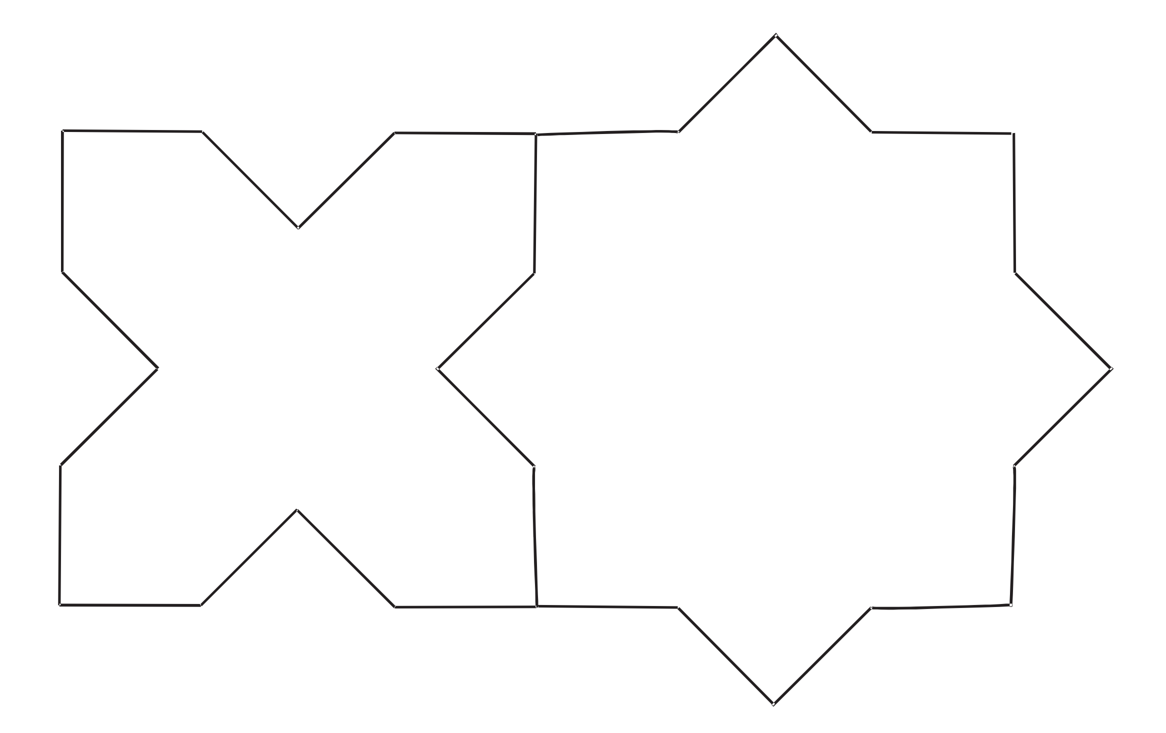


Star and cross tiles
Iran (Ilkhanid), probably Kashan, dated 1262
Fritware with overglaze luster
Victoria and Albert Museum, London

Islamic artists used decorative tilework to enliven interior and exterior walls. One popular example was the combination of star-and cross-shaped tiles set in interlocking patterns.

Create star-and cross-shaped templates by tracing or enlarging the pattern pieces below on a photocopier. Share the templates with the students. Then, ask students to trace the shapes onto heavy paper and cut them out. Next, they should decorate and assemble the pieces for a class project. To decorate your tiles:

- *Include repeating patterns of arabesques, leaf scrolls, floral or geometric motifs. Many objects seamlessly combine geometric and natural motifs.*
- *Consider calligraphy borders—in a religious context borders often include verses of the Qur'an and, in a secular context, verses of poetry. Students could include verses from their favorite poems or stories.*
- *Limit choice of colors for a consistent look.*
- *The final collective project should be balanced.*



To further explore teaching math through Islamic art, go to the Victoria and Albert Museum's online resources. This site offers more information, complex patterns, and activities:
http://www.vam.ac.uk/learning/schools/online_resources/maths_and_islamic_art/?version=1&section=maths_and_islamic_art

GLOSSARY

'abd (Arabic)
"servant of" used with one of the names of God as part of many personal names

abu (Arabic)
"father of" used in personal names

Allah (Arabic)
"the one God"

amir (Arabic); also emir
"prince"

arabesque
Decorative motif based on intertwining plants and flowers arranged in repeating patterns

bazaar (Persian)
"market"

bin (Arabic); also ibn
"son of"

bismallah (Arabic)
the opening words of the Qur'an, "In the name of Allah, the Compassionate, the Merciful," used preceding statements, inscriptions, and actions in daily life

caliph (Arabic)
"successor," the title of leaders of the whole Islamic community after the death of Muhammad

dar (Arabic)
"abode," as in Dar al-Islam, the House of Peace, i.e., all land under Islam

devshirme (Turkish)
conscription of children for state service

hadith (Arabic)
"report," the collected traditions about Muhammad's life and teachings that are, after the Qur'an, the most importance source for Islamic law and guidance for everyday life

hegira or **hijra** (Arabic)
"emigration," the emigration of Muhammad from Mecca to Medina in 622

ibn (Arabic)
"son of"

imam (Arabic)
leader of prayer in a mosque; also a leader of a Shi'ite community

iwan (Persian)
name for a room created by vaulted space open on one side

Ka'bah (Arabic)
"cube," the ancient structure in Mecca that is the direction of prayer

khan (Turkish)
"prince" or "lord"

kufic
from the name of the Iraqi city Kufa, identifying a family of early, angular Arabic scripts

madina (Arabic)
"city"

madrasa (Arabic)
"place of study," a theological school

mamluk (Arabic)
"owned," used for slave-soldiers originally non-Islamic but converted to Islam. The Mamluk sultans ruled Egypt between about 1250 and 1517.

masjid (Arabic)
"place of prostration," mosque

maqsura (Arabic)
screeened area near a mosque's mihrab usually reserved for the ruler

minaret (Arabic)
from "light house," a tall tower attached to a mosque often used for calling the faithful to daily prayers

mihrab (Arabic)
a recessed niche in a mosque that indicates the direction of Mecca

minbar (Arabic)
a pulpit used for Friday prayers in the mosque

mosque
from the Arabic *masjid* "place of prostration"

muqarnas (Arabic)
stalactite-like architectural ornaments projecting in tiers

Muslim (Arabic)
from "one who submits [to God]," that is, a follower of Islam

nastaliq
a cursive script with diagonal sweeps, invented in the fourteenth-century and popular in Persian manuscripts

pishtaq (Persian)
the framing decoration around the opening of an iwan

qiblah (Arabic)
the direction of prayer toward Mecca

Ramadan (Arabic)
name of the ninth month, when Muslims fast during the day

shah (Persian)
"king"

Shi'ite (Arabic)
from "party," that is the party of Ali, son-in-law of the Prophet. One of Islam's major branches, which believes leadership of the Islamic community passed to Ali; cf sunni

Sufi (Arabic)
from suf "wool," denoting the woolen garments worn by Islamic mystics and ascetics who follow a personal and direct approach to religious experience

sultan (Arabic)
"power," a title used from the eleventh-century, first given to Seljuk Turks when they acquired effective control from the Abbasid caliph

Sunni (Arabic)
from "the way," or orthodox way of the Prophet. The largest of the branches of Islam; cf Shi'ite

sura
a chapter of the Qur'an

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This bibliography lists only general works; see section introductions and slide descriptions for sources relating to particular subjects.

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VIDEO AND DVD

Islam: Empire of Faith. PBS series. Robert Gardner, director and producer. Also see the associated web site listed below.

TEACHER RESOURCES

Arts of the Islamic World: A Teacher's Guide, prepared by the Freer Gallery of Art and Arthur M. Sackler Gallery, Smithsonian Institution, is available in a printed version and online on their web site at **www.asia.si.edu**

Teacher materials associated with the PBS series *Islam: Empire of Faith* are available at **www.pbs.org/empires/islam**

The Center for Medieval Studies at Fordham University maintains an online medieval source book, including major sections devoted to Islam and the Crusades at **http://www.fordham.edu/mvst/**

The Council on Islamic Education, a private foundation, offers materials for teachers, including a section about cultural exchange during the period of the European Renaissance, on their web site at **www.cie.org**

SLIDES AND REPRODUCTIONS

(11"x 14" reproductions in bold)

1. Courtyard of the Great Mosque
Damascus, Syria, early 8th century
photograph Carla Brenner

2. Courtyard of the Great Mosque
Isfahan, Iran, 11th–12th century
photograph © Roger Wood/CORBIS

3. Selimiye Mosque
Edirne, Turkey, 1569–1575
photograph Art Resource/NY

4. Minbar for Sultan Qa'itbay
Egypt (Mamluk) probably Cairo,
between 1468 and 1496
Wood with ivory inlay
Victoria and Albert Museum, London

5. Tile commemorating the pilgrimage to Mecca
Turkey, (Ottoman), probably Iznik,
17th century
Fritware with underglaze colors
Victoria and Albert Museum, London

6. Manuscript containing one thirtieth of
the Qur'an
Iran (probably Shiraz), c. 1370–1380
Ink, gold, and colors on paper; tooled and
gilded leather binding
Victoria and Albert Museum, London

7. 'Abd al-A'immah
Astrolabe
Iran (Safavid), Isfahan, dated 1715
Brass with pierced and engraved decoration
Victoria and Albert Museum, London

8. Two physicians preparing medicine
from an Arabic translation of the *Materia medica*
of Dioscorides
Iraq, 1224
Opaque watercolor, ink, and gold on paper
Freer Gallery of Art, Smithsonian Institution,
Washington, D.C.: Purchase F1932.20

9. Al-Idrisi
World map, dated 1533 from an original
of 1154
Oxford, Bodleian Library ms. Pococke 375,
fols. 3v–4r

10. Court of the Lions
The Alhambra
Granada, Spain, mid 14th century
photograph Adam Lubroth/Art Resource, NY

11. Casket with courtly scenes
Spain, (Umayyad), c. 1000
Carved ivory with later silver mounts
Victoria and Albert Museum, London

12. Dish with image of a polo player
Iran, probably Kashan, 1208
Fritware with overglaze luster
Victoria and Albert Museum, London,
Purchased with the assistance of the National
Art Collections Fund and the Bryan Bequest

13. Riza' 'Abbasi
Illustration from *The Romance of Khusraw and Shirin*
Iran (Safavid), Isfahan, 1632
Ink, gold, and colors on paper
Victoria and Albert Museum, London

14. The "Chelsea Carpet"
Iran (Safavid), early 16th century
Knotted wool pile with silk warp and weft
Victoria and Albert Museum, London

15. The Citadel of Aleppo
Aleppo, Syria, 1193–1215 with subsequent
rebuilding
photograph © Angelo Hornak/CORBIS

16. The "Luck of Edenhall"
Egypt or Syria (Ayyubid or Mamluk), 13th century; case: English or French, 14th century
Enameled and gilded glass; leather case
Victoria and Albert Museum, London,
Purchased with the assistance of the Pilgrim Trust, the National Art Collections Fund, the Goldsmiths' Company, the Salters' Company, the Drapers' Company and the Merchant Taylors' Company

17. Tray decorated with inscriptions
Egypt (Mamluk), probably Cairo, between 1314 and 1363
Brass with gold and silver inlay
Victoria and Albert Museum, London

18. Dish with luster decoration
Italy, probably Deruta, c. 1500–1540
Earthenware with overglaze luster
Victoria and Albert Museum, London

19. Blue-and-white storage jar
Iran (Safavid), 17th century
Fritware with underglaze colors
Victoria and Albert Museum, London

20. Composite slide with two fabrics:
Left: Length of Italian velvet
Italy, 15th century
Silk velvet with metal thread
Victoria and Albert Museum, London
Right: Length of Turkish velvet
Turkey (Ottoman), probably Bursa, 16th century
Silk velvet with metal thread
Victoria and Albert Museum, London

SECTIONS/SLIDES	RELIGION					SOCIAL STUDIES					ART						MATH/SCIENCE		
	Muhammad and early Islam	Five Pillars of Islam	Qur'an	the mosque	Sunnis, Shi'as, Sufis	history of Islamic world	the Crusades	East-West exchange	history of science	literature/music	influences on	style of	issue of images	arts of the book	arts of the object	architecture	geometry	astronomy	algebra
INTRODUCTION	●										●	●	●	●	●				
HISTORICAL SURVEY	●					●	●	●			●	●							
SECTION 1: ISLAM, MOSQUE, QUR'AN	●	●	●	●	●							●		●		●			
DAMASCUS MOSQUE												●	●			●			
ISFAHAN MOSQUE				●								●				●			
SELIMYE MOSQUE				●								●				●			
MINBAR				●								●					●		
KA'BAH TILE	●	●										●			●				
QUR'AN LEAVES	●		●									●		●					
SCIENCE AND LEARNING						●		●	●										
ASTROLABE									●						●			●	●
LEAF FROM *MATERIA MEDICA*									●			●							
MAP OF AL-IDRISI									●					●					
PALACES AND POETRY						●		●		●						●			
THE ALHAMBRA						●						●				●			
IVORY CASKET										●		●			●				
POLO PLAYER DISH					●			●		●		●			●				
MANUSCRIPT ILLUMINATION										●		●		●					
CHELSEA CARPET								●				●	●						
ARTS OF THE OBJECT IN EXCHANGE						●		●											
CITADEL OF ALEPPO						●	●	●								●			
LUCK OF EDENHALL							●	●							●				
MAMLUK TRAY						●	●	●							●				
DISH WITH MEHMET THE CONQUEROR						●	●	●							●				
BLUE-AND-WHITE JAR								●							●				
TWO VELVETS								●							●				